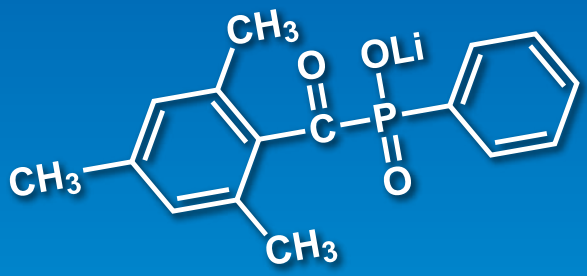
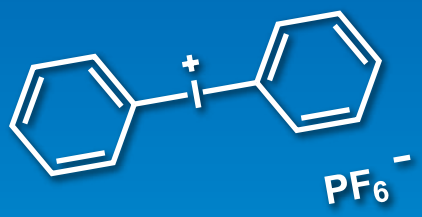
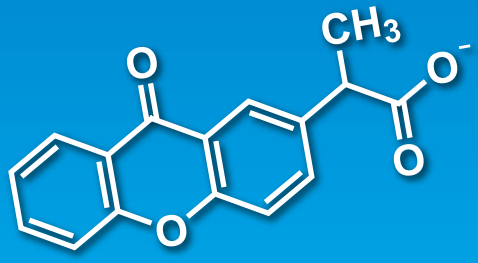
MATERIALS

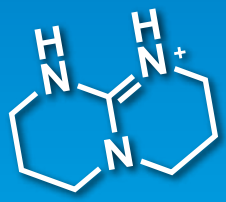
TCI

Polymerization Initiators









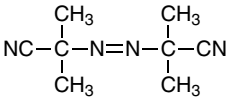
Thermal Polymerization Initiators

Photopolymerization Initiators

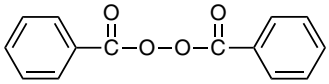
Polymerization Initiators

Initiators are often used in chain-growth polymerization such as radical polymerization to regulate initiation by heat or light.

Thermal polymerization initiators are compounds that generate radicals or cations upon exposure to heat. For example, azo compounds such as 2,2'-azobis(isobutyronitrile) (AIBN) and organic peroxides such as benzoyl peroxide (BPO) are well-known thermal radical initiators, and benzenesulfonic acid esters and alkylsulfonium salts have been developed as thermal cation initiators.

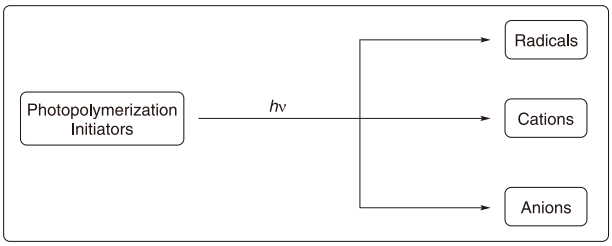


AIBN
[A0566]



BPO
[B3152]

Photopolymerization initiators are used in many fields to generate photocurable composites. These composites are polymerized by irradiation with UV light and electron beam which leads to altered physical properties of the composites such as solubility, viscosity and adhesiveness. In particular, the phenomenon in which a liquid changes into a solid is most useful and is applied to surface-treating techniques in fields including paints, printing inks, dental materials, lithography, photoresist, etc.



Photopolymerization initiators can be divided roughly into three groups with the generated active species, as shown in the upper figure. The conventional photopolymerization initiators generate free radicals upon light irradiation, and the resulting radical starts the polymerization process. Typical initiators are represented by benzoin derivatives. Photo-acid generators which produce cations (acid) by light irradiation, were put to practical use in the late 1990s. Photo-base generators, which produce anions (base) by light irradiation, are of current interest in research.

References

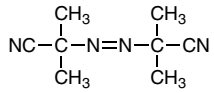
The Chemistry of Radical Polymerization, 2nd ed., ed. by G. Moad, D. H. Solomon, Elsevier B.V., Amsterdam, **2005**.

Photopolymers: Photoresist Materials, Processes, and Applications, ed. by K. Nakamura, CRC Press, Florida, **2014**.

Thermal Polymerization Initiators

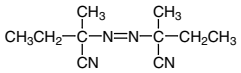
Thermal Radical Initiators

A0566 25g 500g



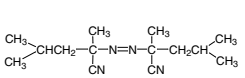
AIBN
CAS RN: 78-67-1

A1670 25g 500g



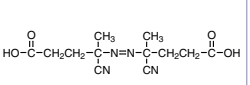
AMBN
CAS RN: 13472-08-7

A0680 25g 500g



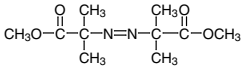
ADVN
CAS RN: 4419-11-8

A1671 25g 250g



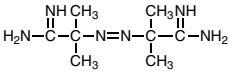
ACVA (contains *ca.* 20% Water)
CAS RN: 2638-94-0

D3797 25g



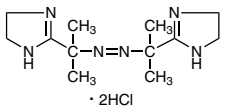
Dimethyl 2,2'-Azobis(2-methylpropionate)
CAS RN: 2589-57-3

A2735 25g



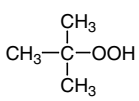
AAPH
CAS RN: 2997-92-4

A3012 25g 100g



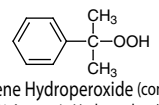
2,2'-Azobis[2-(2-imidazolin-2-yl)-propane] Dihydrochloride
CAS RN: 27776-21-2

B3153 100g



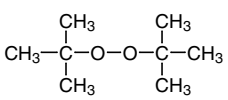
TBHP (70% in Water)
CAS RN: 75-91-2

C2223 100g



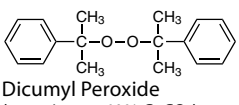
Cumene Hydroperoxide (contains *ca.* 20% Aromatic Hydrocarbon)
CAS RN: 80-15-9

D3411 100mL



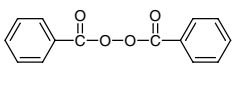
Di-*tert*-butyl Peroxide
CAS RN: 110-05-4

D4894 100g 500g



Dicumyl Peroxide
(contains *ca.* 60% $CaCO_3$)
CAS RN: 80-43-3

B3152 25g



BPO (wetted with *ca.* 25% Water)
CAS RN: 94-36-0

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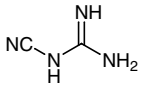
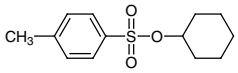
Thermal Cationic Initiators

C0454 25g 500g



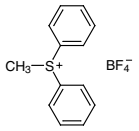
Dicyandiamide
CAS RN: 461-58-5

C2363 5g 25g



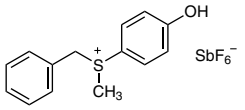
Cyclohexyl Tosylate
CAS RN: 953-91-3

D2685 1g 5g



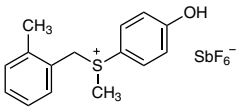
Diphenyl(methyl)sulfonium Tetrafluoroborate
CAS RN: 10504-60-6

B5428 5g 25g



Benzyl(4-hydroxyphenyl)-methylsulfonium Hexafluoroantimonate
CAS RN: 125662-42-2

H1620 5g 25g

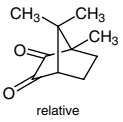


(4-Hydroxyphenyl)methyl-(2-methylbenzyl)sulfonium Hexafluoroantimonate
CAS RN: 141651-31-2

Photopolymerization Initiators

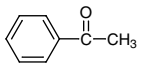
Photo-Radical Initiators

C0014 5g 25g



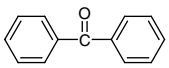
(±)-Camphorquinone
CAS RN: 10373-78-1

A0061 25g 500g



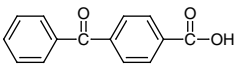
Acetophenone
CAS RN: 98-86-2

B0083 25g 500g



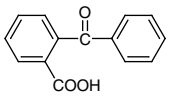
Benzophenone
CAS RN: 119-61-9

B1164 5g 25g



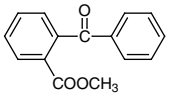
4-Benzoylbenzoic Acid
CAS RN: 611-95-0

B0103 25g 500g



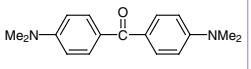
2-Benzoylbenzoic Acid
CAS RN: 85-52-9

B1231 25g 100g 500g



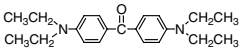
Methyl 2-Benzoylbenzoate
CAS RN: 606-28-0

B0481 25g 100g 500g



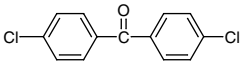
4,4'-Bis(dimethylamino)-benzophenone
CAS RN: 90-94-8

B0139 25g 100g 500g



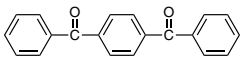
4,4'-Bis(diethylamino)-benzophenone
CAS RN: 90-93-7

D1621 25g 100g 500g



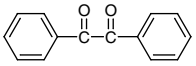
4,4'-Dichlorobenzophenone
CAS RN: 90-98-2

D4196 5g



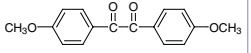
1,4-Dibenzoylbenzene
CAS RN: 3016-97-5

B0050 25g 500g



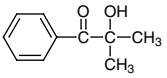
Benzil
CAS RN: 134-81-6

A1028 5g 25g



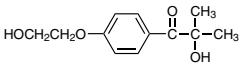
p-Anisil
CAS RN: 1226-42-2

H0991 25g 100g 500g



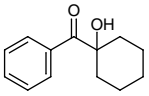
2-Benzoyl-2-propanol
CAS RN: 7473-98-5

H1361 5g 25g 100g



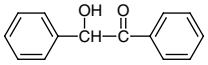
2-Hydroxy-4'-(2-hydroxyethoxy)-2-methylpropiophenone
CAS RN: 106797-53-9

H0617 25g 100g 500g



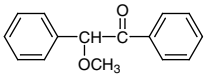
1-Benzoylcyclohexanol
CAS RN: 947-19-3

B0079 25g 500g



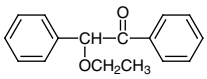
Benzoin
CAS RN: 119-53-9

B0869 25g 500g



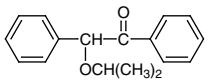
Benzoin Methyl Ether
CAS RN: 3524-62-7

B1019 25g 100g 500g



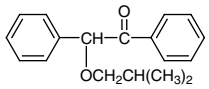
Benzoin Ethyl Ether
CAS RN: 574-09-4

B0942 25g 500g



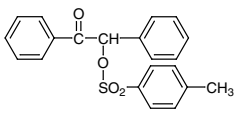
Benzoin Isopropyl Ether
CAS RN: 6652-28-4

B1015 25g 500g



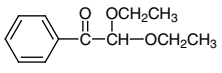
Benzoin Isobutyl Ether
CAS RN: 22499-12-3

P1410 1g



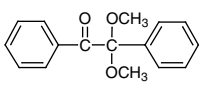
O-Tosylbenzoin
CAS RN: 1678-43-9

D1640 25g 100g 500g



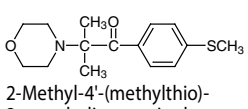
2,2-Diethoxyacetophenone
CAS RN: 6175-45-7

D1702 25g 100g 500g



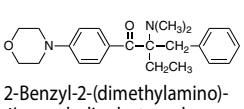
Benzil Dimethylketal
CAS RN: 24650-42-8

M2028 25g 100g 500g



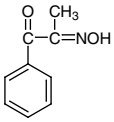
2-Methyl-4'-(methylthio)-2-morpholinopropiophenone
CAS RN: 71868-10-5

B3914 25g 100g



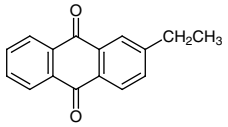
2-Benzyl-2-(dimethylamino)-4'-morpholinobutyrophenone
CAS RN: 119313-12-1

P0211 25g



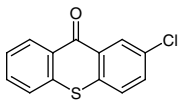
2-Isonitrosopropiophenone
CAS RN: 119-51-7

E0063 25g 500g



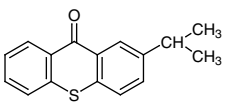
2-Ethylanthraquinone
CAS RN: 84-51-5

C0292 5g 25g



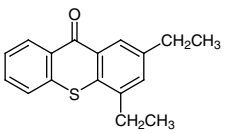
2-Chlorothioxanthone
CAS RN: 86-39-5

I0678 25g



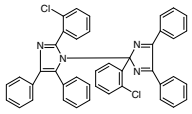
2-Isopropylthioxanthone
CAS RN: 5495-84-1

D2375 25g 250g



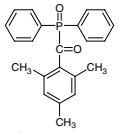
2,4-Diethylthioxanthen-9-one
CAS RN: 82799-44-8

B1225 25g



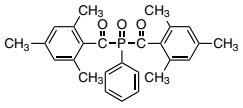
2,2'-Bis(2-chlorophenyl)-4,4',5,5'-tetraphenyl-1,2'-biimidazole
CAS RN: 7189-82-4

D3358 25g



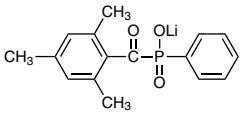
Diphenyl(2,4,6-trimethylbenzoyl)phosphine Oxide
CAS RN: 75980-60-8

P2312 5g 25g



Phenylbis(2,4,6-trimethylbenzoyl)phosphine Oxide
CAS RN: 162881-26-7

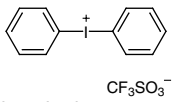
L0290 1g 5g



Lithium Phenyl(2,4,6-trimethylbenzoyl)phosphinate
CAS RN: 85073-19-4

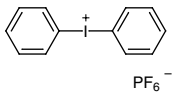
Photo-Cationic Initiators

D2253 1g 5g 25g



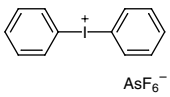
Diphenyliodonium Trifluoromethanesulfonate
CAS RN: 66003-76-7

D2238 1g 5g 25g



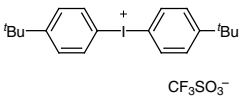
Diphenyliodonium Hexafluorophosphate
CAS RN: 58109-40-3

D2248 1g



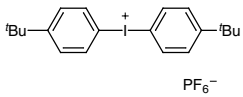
Diphenyliodonium Hexafluoroarsenate
CAS RN: 62613-15-4

B2381 1g



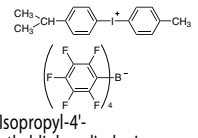
Bis(4-tert-butylphenyl)-iodonium Triflate
CAS RN: 84563-54-2

B2380 1g 5g



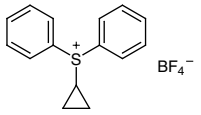
Bis(4-*tert*-butylphenyl)iodonium Hexafluorophosphate
CAS RN: 61358-25-6

I0591 5g 25g



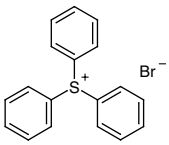
4-Isopropyl-4'-methyldiphenyliodonium Tetrakis(pentafluorophenyl)borate
CAS RN: 178233-72-2

C1390 1g



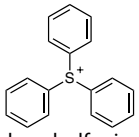
Cyclopropyldiphenylsulfonium Tetrafluoroborate
CAS RN: 33462-81-6

T1609 100mg 1g 5g



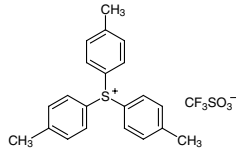
Triphenylsulfonium Bromide
CAS RN: 3353-89-7

T1608 1g 5g



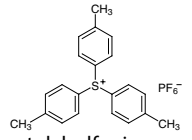
Triphenylsulfonium Tetrafluoroborate
CAS RN: 437-13-8

T2042 1g 5g



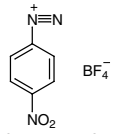
Tri-*p*-tolylsulfonium Triflate
CAS RN: 127820-38-6

T2041 1g



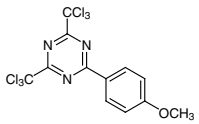
Tri-*p*-tolylsulfonium Hexafluorophosphate
CAS RN: 146062-15-9

N0137 25g



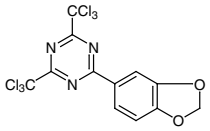
4-Nitrobenzenediazonium Tetrafluoroborate
CAS RN: 456-27-9

M1245 5g 25g



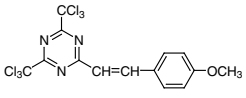
2-(4-Methoxyphenyl)-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 3584-23-4

B3633 5g



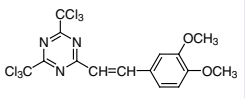
2-(1,3-Benzodioxol-5-yl)-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 71255-78-2

M2140 5g 25g



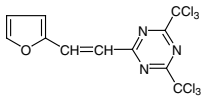
2-(4-Methoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 42573-57-9

D2963 5g



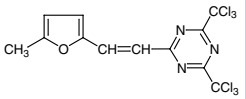
2-(3,4-Dimethoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 42880-07-9

F0362 5g



2-[2-(Furan-2-yl)vinyl]-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 154880-05-4

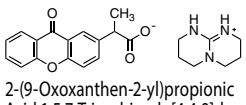
M1209 5g



2-[2-(5-Methylfuran-2-yl)vinyl]-4,6-bis(trichloromethyl)-1,3,5-triazine
CAS RN: 156360-76-8

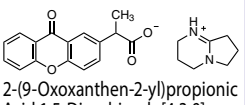
Photo-Anionic Initiators

O0396 1g



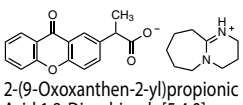
2-(9-Oxoxanthen-2-yl)propionic Acid 1,5,7-Triazabicyclo[4.4.0]dec-5-ene Salt
CAS RN: 1346753-09-0

O0447 1g



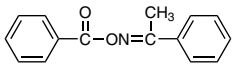
2-(9-Oxoxanthen-2-yl)propionic Acid 1,5-Diazabicyclo[4.3.0]non-5-ene Salt
CAS RN: 1346753-04-5

O0448 1g



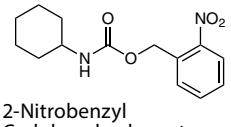
2-(9-Oxoxanthen-2-yl)propionic Acid 1,8-Diazabicyclo[5.4.0]-undec-7-ene Salt
CAS RN: 1346753-05-6

A2502 1g 5g



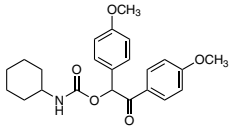
Acetophenone *O*-Benzoyloxime
CAS RN: 26060-56-0

N1052 1g



2-Nitrobenzyl Cyclohexylcarbamate
CAS RN: 119137-03-0

B5085 200mg 1g



1,2-Bis(4-methoxyphenyl)-2-oxoethyl Cyclohexylcarbamate
CAS RN: 196599-80-1

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