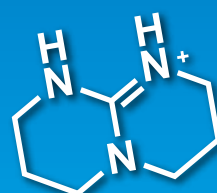
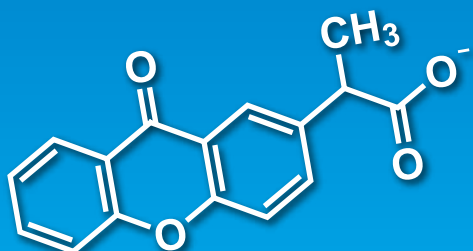
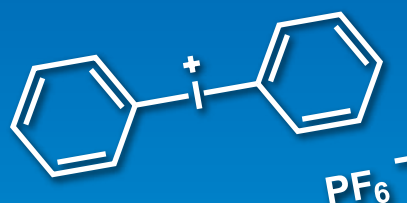
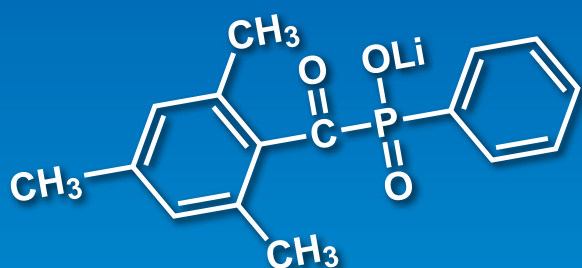


Polymerization Initiators



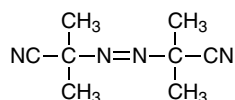
Thermal Polymerization Initiators

Photopolymerization Initiators

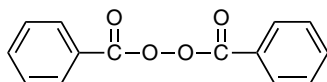
Polymerization Initiators

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.

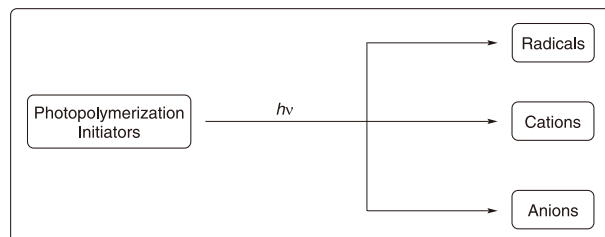


AIBN
[A0566]



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

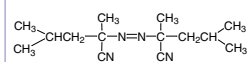
The Chemistry of Radical Polymerization, 2nd ed., ed. by G. Moad, D. H. Solomon, Elsevier B.V., Amsterdam, **2005**.

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

Thermal Polymerization Initiators

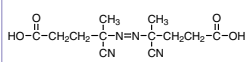
Thermal Radical Initiators

A0680 25g 500g



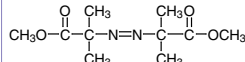
ADV N
CAS RN: 4419-11-8

A1671 25g 250g



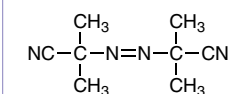
ACVA (contains ca. 20% Water)
CAS RN: 2638-94-0

D3797 25g



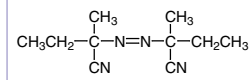
Dimethyl 2,2'-Azo-bis(2-methylpropionate)
CAS RN: 2589-57-3

A0566 25g 500g



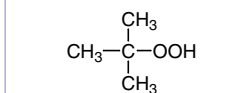
AIBN
CAS RN: 78-67-1

A1670 25g 500g



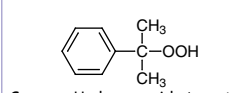
AMB N
CAS RN: 13472-08-7

B3153 100g



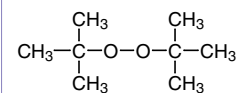
TBHP (70% in Water)
CAS RN: 75-91-2

C2223 100g



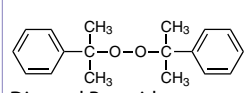
Cumene Hydroperoxide (contains ca. 20% Aromatic Hydrocarbon)
CAS RN: 80-15-9

D3411 100mL



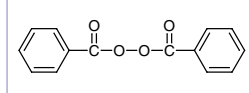
Di-*tert*-butyl Peroxide
CAS RN: 110-05-4

D4894 100g 500g



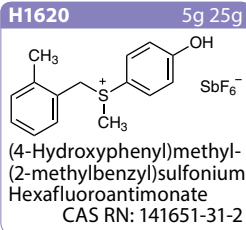
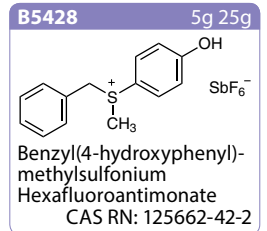
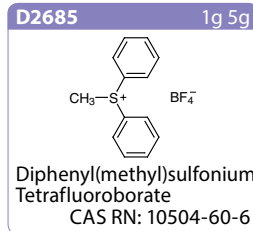
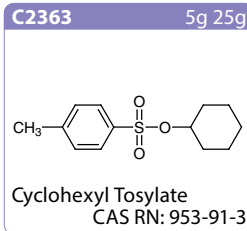
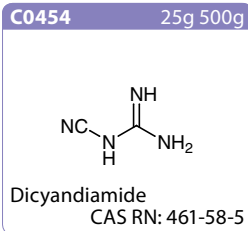
Dicumyl Peroxide (contains ca. 60% CaCO₃)
CAS RN: 80-43-3

B3152 25g



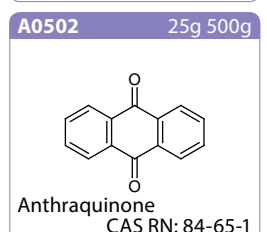
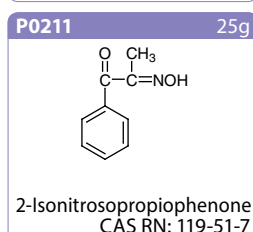
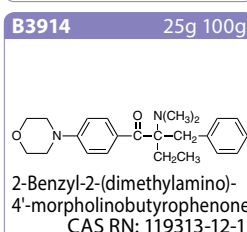
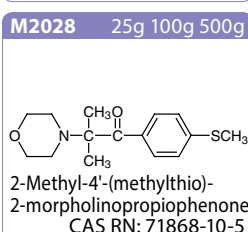
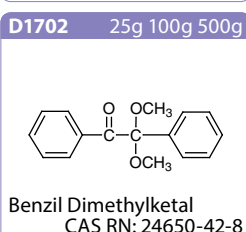
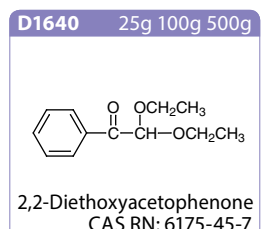
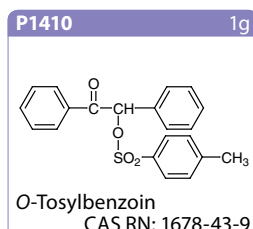
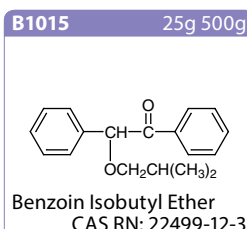
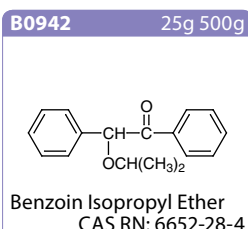
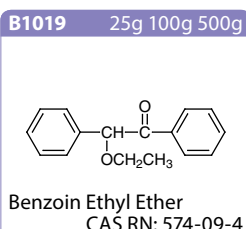
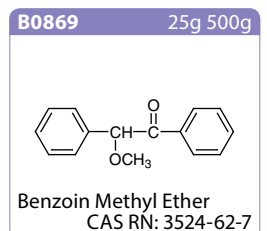
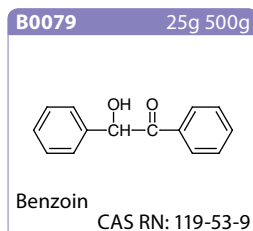
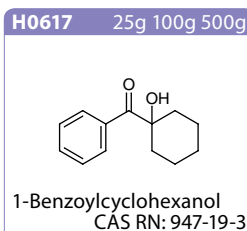
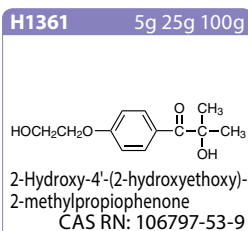
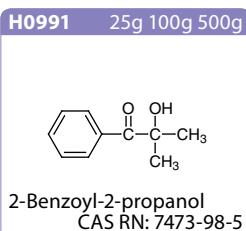
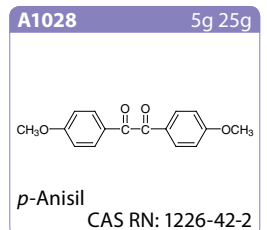
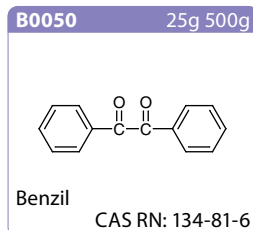
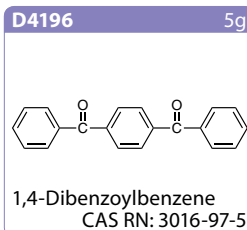
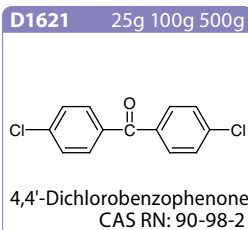
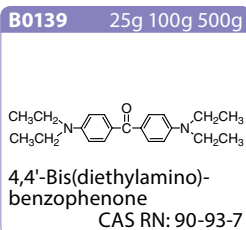
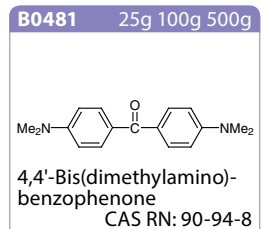
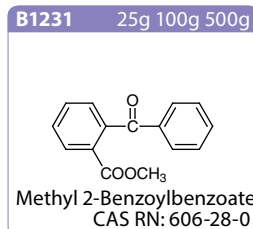
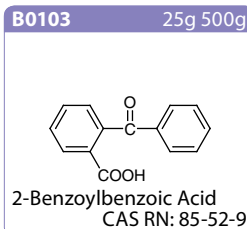
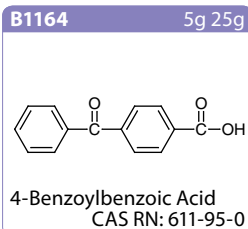
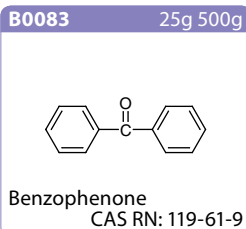
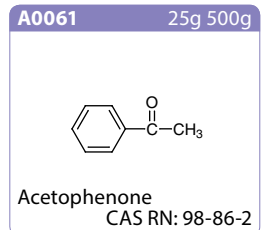
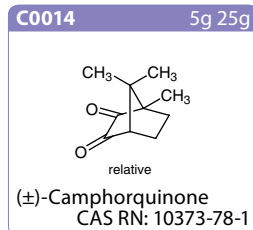
BPO (wetted with ca. 25% Water)
CAS RN: 94-36-0

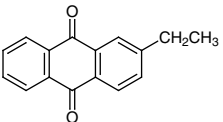
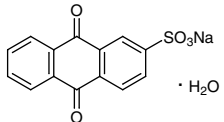
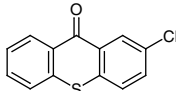
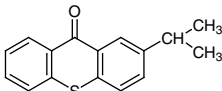
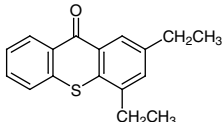
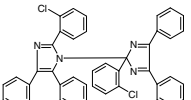
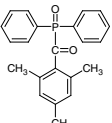
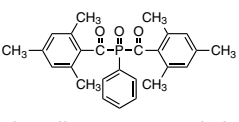
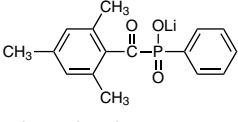
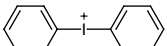
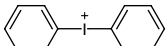
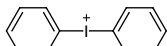
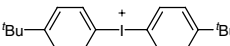
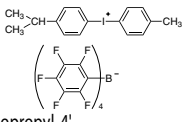
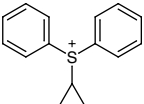
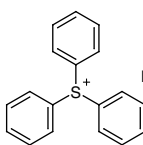
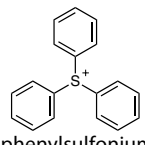
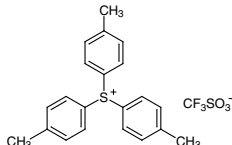
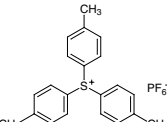
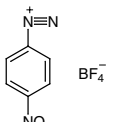
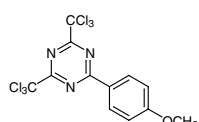
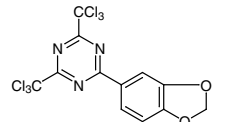
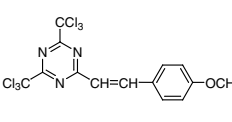
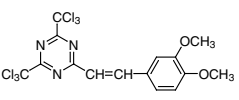
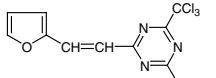
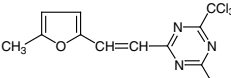
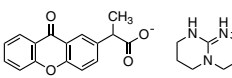
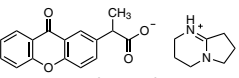
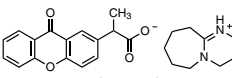
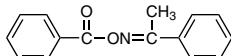
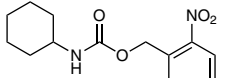
Thermal Cationic Initiators



Photopolymerization Initiators

Photo-Radical Initiators



<p>E0063 25g 500g</p>  <p>2-Ethylanthraquinone CAS RN: 84-51-5</p>	<p>A0508 25g 500g</p>  <p>Sodium Anthraquinone-2-sulfonate Monohydrate CAS RN: 153277-35-1</p>	<p>C0292 5g 25g</p>  <p>2-Chlorothioxanthone CAS RN: 86-39-5</p>	<p>I0678 25g</p>  <p>2-Isopropylthioxanthone CAS RN: 5495-84-1</p>	<p>D2375 25g 250g</p>  <p>2,4-Diethylthioxanthone-9-one CAS RN: 82799-44-8</p>
<p>B1225 25g</p>  <p>2,2'-Bis(2-chlorophenyl)-4,4',5,5'-tetraphenyl-1,2'-biimidazole CAS RN: 7189-82-4</p>	<p>D3358 25g</p>  <p>Diphenyl(2,4,6-trimethylbenzoyl)phosphine Oxide CAS RN: 75980-60-8</p>	<p>P2312 5g 25g</p>  <p>Phenylbis(2,4,6-trimethylbenzoyl)phosphine Oxide CAS RN: 162881-26-7</p>	<p>L0290 1g 5g</p>  <p>Lithium Phenyl(2,4,6-trimethylbenzoyl)phosphinate CAS RN: 85073-19-4</p>	<p style="text-align: center;">Photo-Cationic Initiators</p>
<p>D2253 1g 5g 25g</p>  <p>Diphenyliodonium Trifluoromethanesulfonate CAS RN: 66003-76-7</p>	<p>D2238 1g 5g 25g</p>  <p>Diphenyliodonium Hexafluorophosphate CAS RN: 58109-40-3</p>	<p>D2248 1g</p>  <p>Diphenyliodonium Hexafluoroarsenate CAS RN: 62613-15-4</p>	<p>B2381 1g</p>  <p>Bis(4-tert-butylphenyl)iodonium Triflate CAS RN: 84563-54-2</p>	
<p>I0591 5g 25g</p>  <p>4-Isopropyl-4'-methylidiphenyliodonium Tetrakis(pentafluorophenyl)borate CAS RN: 178233-72-2</p>	<p>C1390 1g</p>  <p>Cyclopropyldiphenylsulfonium Tetrafluoroborate CAS RN: 33462-81-6</p>	<p>T1609 100mg 1g 5g</p>  <p>Triphenylsulfonium Bromide CAS RN: 3353-89-7</p>	<p>T1608 1g 5g</p>  <p>Triphenylsulfonium Tetrafluoroborate CAS RN: 437-13-8</p>	<p>T2042 1g 5g</p>  <p>Tri-p-tolylsulfonium Triflate CAS RN: 127820-38-6</p>
<p>T2041 1g</p>  <p>Tri-p-tolylsulfonium Hexafluorophosphate CAS RN: 146062-15-9</p>	<p>N0137 25g</p>  <p>4-Nitrobenzenediazonium Tetrafluoroborate CAS RN: 456-27-9</p>	<p>M1245 5g 25g</p>  <p>2-(4-Methoxyphenyl)-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 3584-23-4</p>	<p>B3633 5g</p>  <p>2-(1,3-Benzodioxol-5-yl)-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 71255-78-2</p>	<p>M2140 5g 25g</p>  <p>2-(4-Methoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 42573-57-9</p>
<p>D2963 5g</p>  <p>2-(3,4-Dimethoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 42880-07-9</p>	<p>F0362 5g</p>  <p>2-[2-(Furan-2-yl)vinyl]-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 154880-05-4</p>	<p>M1209 5g</p>  <p>2-[2-(5-Methylfuran-2-yl)vinyl]-4,6-bis(trichloromethyl)-1,3,5-triazine CAS RN: 156360-76-8</p>	<p style="text-align: center;">Photo-Anionic Initiators</p>	<p>O0396 1g</p>  <p>2-(9-Oxoxantho-2-yl)propionic Acid 1,5,7-Triazabicyclo[4.4.0]dec-5-ene Salt CAS RN: 1346753-09-0</p>
<p>O0447 1g</p>  <p>2-(9-Oxoxantho-2-yl)propionic Acid 1,5-Diazabicyclo[4.3.0]non-5-ene Salt CAS RN: 1346753-04-5</p>	<p>O0448 1g</p>  <p>2-(9-Oxoxantho-2-yl)propionic Acid 1,8-Diazabicyclo[5.4.0]undec-7-ene Salt CAS RN: 1346753-05-6</p>	<p>A2502 1g 5g</p>  <p>Acetophenone O-Benzoyloxime CAS RN: 26060-56-0</p>		<p>N1052 1g</p>  <p>2-Nitrobenzyl Cyclohexylcarbamate CAS RN: 119137-03-0</p>

Ordering and Customer Service

TCI AMERICA

Tel : 800-423-8616 / 503-283-1681
Fax : 888-520-1075 / 503-283-1987
E-mail : Sales-US@TCIchemicals.com

TCI EUROPE N.V.

Tel : +32 (0)3 735 07 00
Fax : +32 (0)3 735 07 01
E-mail : Sales-EU@TCIchemicals.com

TCI Deutschland GmbH

Tel : +49 (0)6196 64053-00
Fax : +49 (0)6196 64053-01
E-mail : Sales-DE@TCIchemicals.com

Tokyo Chemical Industry UK Ltd.

Tel : +44 (0)1865 784560
Fax : +44 (0)1865 784561
E-mail : Sales-UK@TCIchemicals.com

TCI Chemicals (India) Pvt. Ltd.

Tel : 1800 425 7889 / 044-2262 0909
Fax : 044-2262 8902
E-mail : Sales-IN@TCIchemicals.com

梯希爱(上海)化成工业发展有限公司

Tel : 800-988-0390 / 021-67121386
Fax : 021-6712-1385
E-mail : Sales-CN@TCIchemicals.com

TOKYO CHEMICAL INDUSTRY CO., LTD.

Tel : +81 (0)3-5640-8878
Fax : +81 (0)3-5640-8902
E-mail : globalbusiness@TCIchemicals.com

Availability, price or specification of the listed products are subject to change without prior notice. Reproduction forbidden without the prior written consent of Tokyo Chemical Industry Co., Ltd.