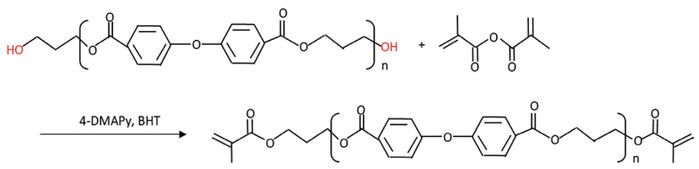
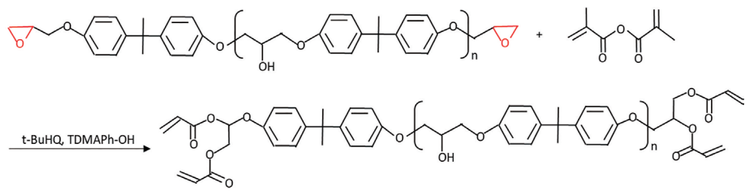
3-6 | Dental materials

(Meth) acrylic esters obtained by reaction with benzoate alcohol derivatives are used as dental adhesive monomers.



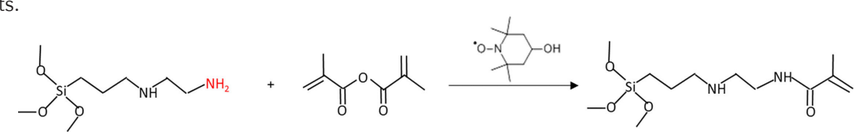
3-7 | Fuel cells

Multifunctional (meth) acrylic esters and partial esters synthesized by reaction with epoxy resin are used as separators for fuel cells.



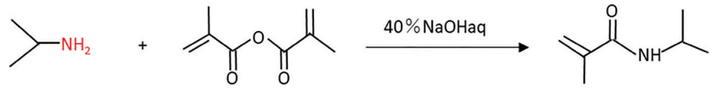
3-8 | Water-based sizing agent

Acrylamide derivatives obtained by reaction with acrylamide-functionalized alkoxysilane are used as water-based sizing agents.



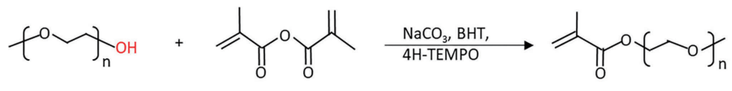
3-9 | Polymeric gas hydrate formation inhibitor

(Meth) acrylic esters obtained by reaction with N-alkylamine are used as building blocks for polymer gas hydrate inhibitors.



3-10 | Concrete superplasticizer

(Meth) acrylic esters obtained by reaction with polyalkylene glycol compounds with a hydroxyl group are used as concrete superplasticizers.



In addition to prototype production and sales of high-purity acid anhydrides (acrylic anhydride, methacrylic anhydride), our company manufactures and sells high-purity acid chlorides (acryloyl chloride, methacryloyl chloride). Commissioned manufacture of these compounds for esterification and amidation is also available.

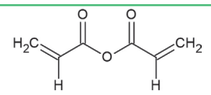
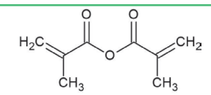
Inquiries CHEMICAL SOFT Co., Ltd.
e-mail chemistry@chemicalsoft.co.jp

High purity (meth) acrylic anhydride

Chemical Soft Co., Ltd. has achieved high level purification of (meth) acrylic anhydride, and can now provide high-purity (meth) acrylic anhydride at 99% purity or higher.

1 Properties

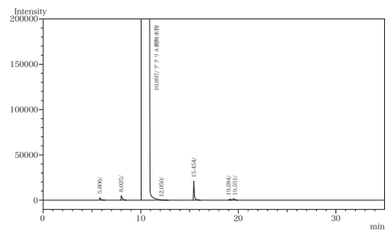
(Meth) acrylic anhydride has the following properties.

	Structural formula	
Acrylic anhydride	English chemical name	Methacrylic anhydride
2051-76-5	CAS No.	760-93-0
N/A	Chemical Substance Control Law	2-1026
4-(7)-2549	Industrial Safety and Health Act	Publicized Chemical Substances
Class 4 Class III Petroleum Class III Hazard Non-water soluble	Fire Service Act	Class 4 Class III Petroleum Class III Hazard Non-water soluble
$C_6H_6O_3$	Chemical formula	$C_8H_{10}O_3$
126.11	Molecular weight	154.17
Transparent liquid	Physical state	Transparent liquid
Colorless	Color	Colorless
Irritating odor	Odor	Irritating odor
-20°C	Melting point (lit)	<-25°C
84°C /2 kPa	Boiling point	90°C/2 kPa
1.094/20°C	Specific gravity (lit)	1.032/20°C
77	Ignition point (°C)	84
8	U.N. classification of hazardous materials	8
II	Container class	II
99% or higher	Purity (GC)	99% or higher

2 Chromatography

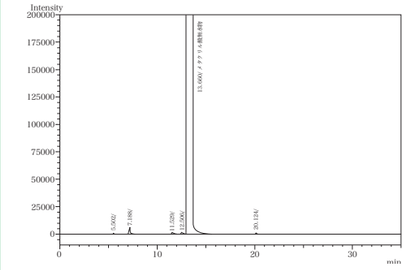
A typical chromatograph of (Meth) acrylic anhydride.

Acrylic anhydride



ピーク番号	保持時間	高さ	面積	面積%	化合物名
1	5.806	1714	13848	0.0120	
2	8.025	3714	30240	0.0261	
3	10.897	4285029	115521390	99.8978	アクリル酸無水物
4	12.050	214	1582	0.0014	
5	15.454	19482	63149	0.0546	
6	19.284	395	1926	0.0017	
7	19.551	694	7475	0.0065	
合計		4311242	115639610	100.0000	

Methacrylic anhydride



ピーク番号	保持時間	高さ	面積	面積%	化合物名
1	5.502	398	1228	0.0010	
2	7.188	5749	49570	0.0398	
3	11.529	1249	14667	0.0118	
4	12.506	1063	13104	0.0105	
5	13.660	5943916	124457432	99.9341	メタクリル酸無水物
6	20.124	790	3508	0.0028	
合計		5953165	124539509	100.0000	

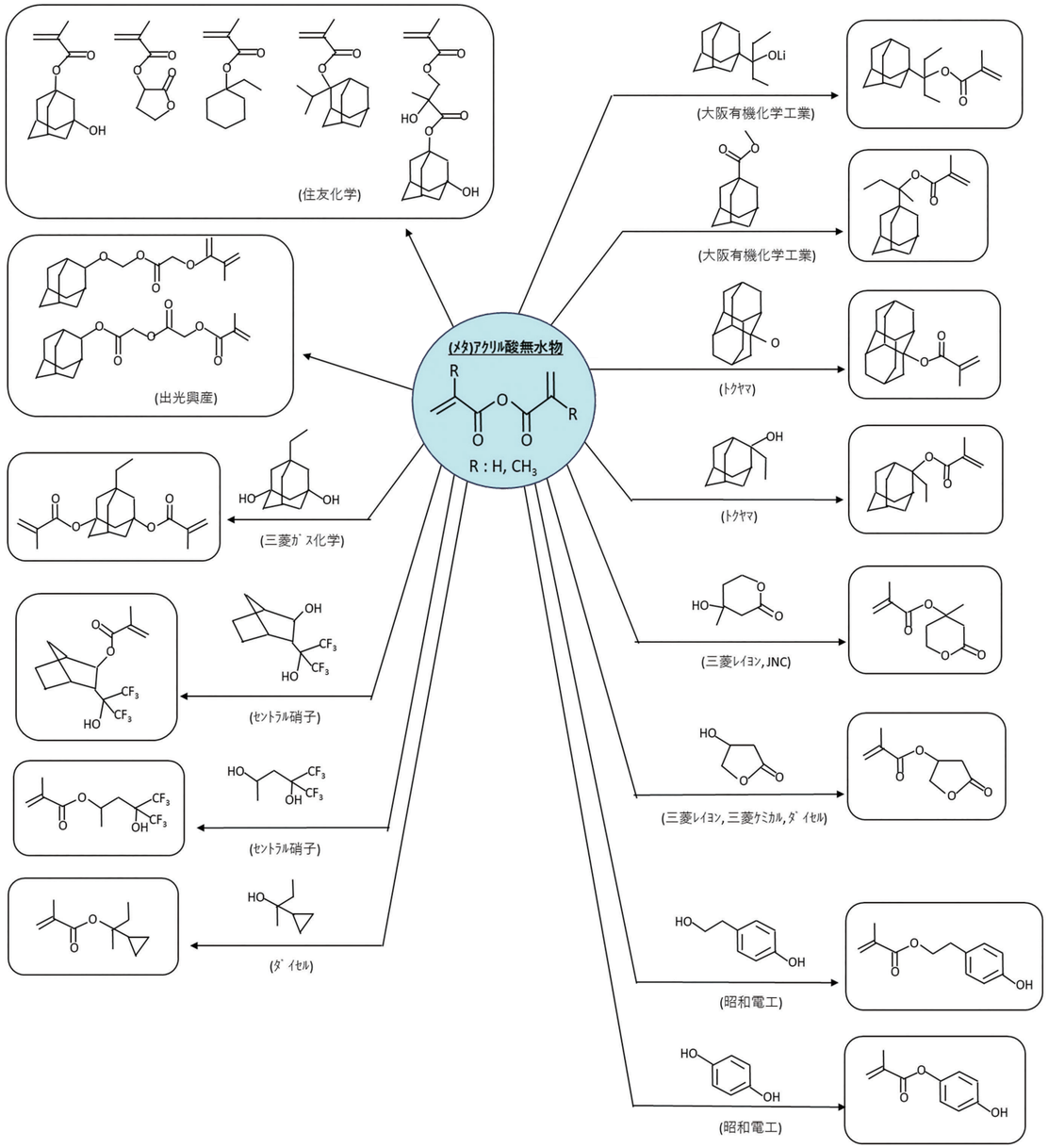
CHEMICAL SOFT Co., Ltd.
2024.04

3 Applications in various reactions

(Meth) acrylic anhydrides which are reacted with functional group compounds to form derivatives are used in various applications.

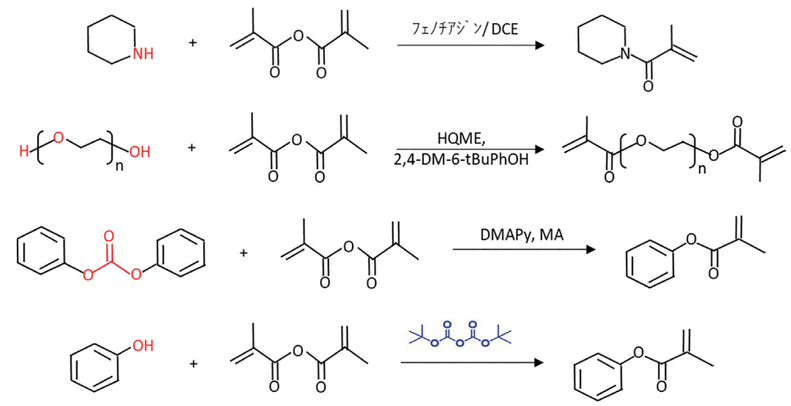
3-1 | Photoresist

Alicyclic (meth) acrylic esters synthesized by reaction with alcohols, alcoholates, etc., are mainly used for photoresist applications.



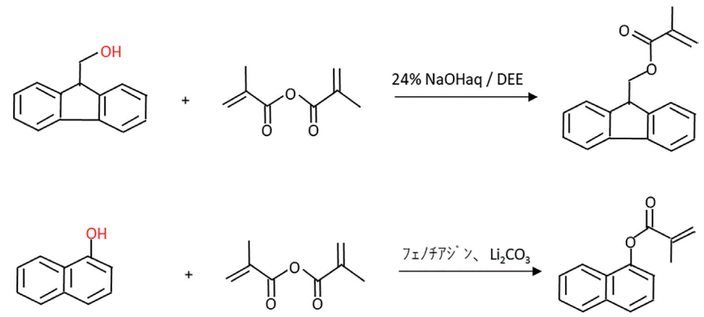
3-2 | Paints, resins, adhesives, etc.

Acrylamides and acrylic esters obtained by reaction with amino group, hydroxyl group, carbonate, phenol, etc., are used in paint, resin, adhesives, etc.



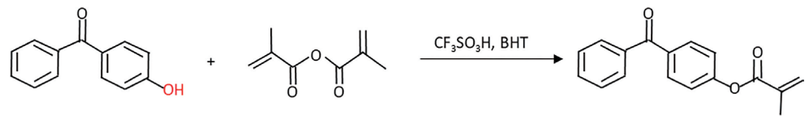
3-3 | Lenses

(Meth) acrylic esters obtained by reacting with fluorene derivatives which contain a hydroxyl group and aromatic compounds such as naphthol, are used as high refractive lens monomers.



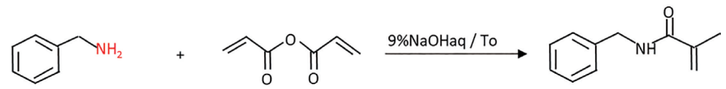
3-4 | Photoinitiator

Compounds obtained by reaction with photosensitive phenol derivatives are used as photoinitiators for UV paints and coatings.



3-5 | Medical and agrochemicals

(Meth) acrylamide derivatives obtained by reaction with benzylamine are used as intermediates for antiepileptic drugs.



(Meth) acrylic esters obtained by reaction with lactone compounds with a hydroxyl group are used in the medical and agrochemical fields.