

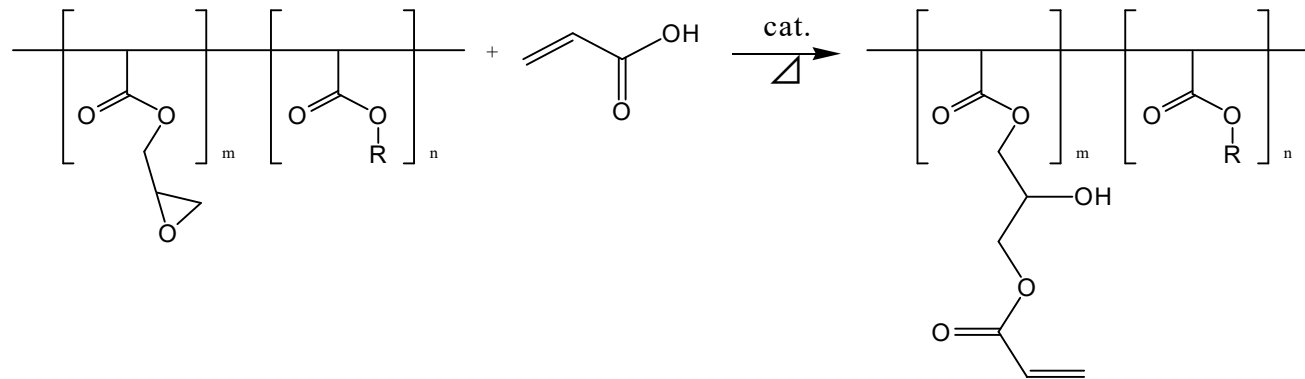
NEGAMI CHEMICAL INDUSTRIAL CO.,LTD

Product information

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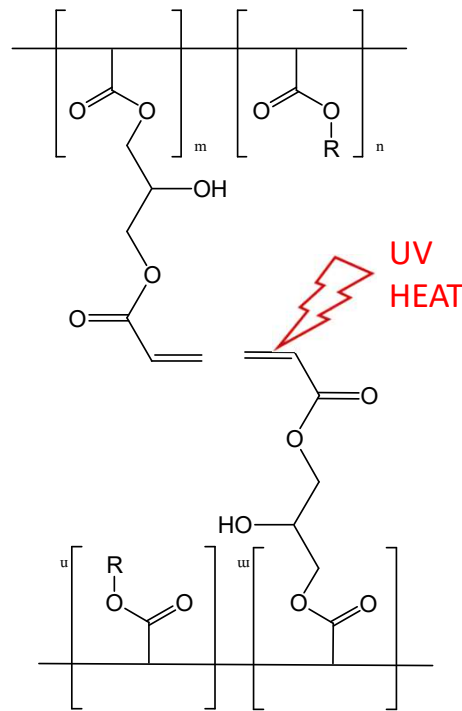
What is ART CURE ?

☆ Polyacrylate by radical polymerization ,with UV curable C=C doublebond (acryloil group,methacryloil group).



☆ Double bonds of a polymer side chain react by the UV+ photoinitiator and the heat+ peroxide, and hardening reaction happens.

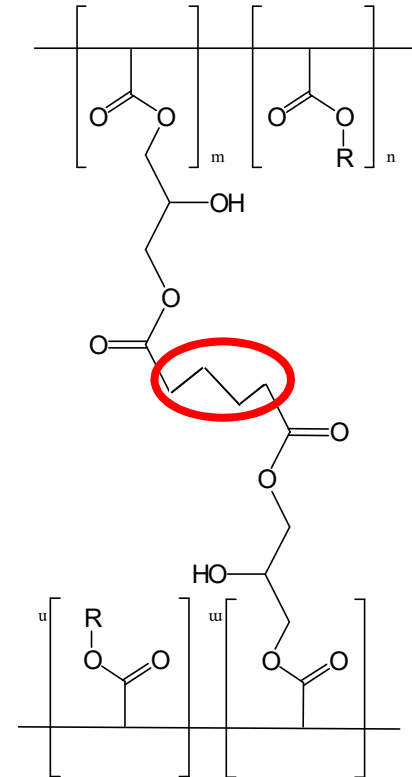
Curing Reaction of ART CURE



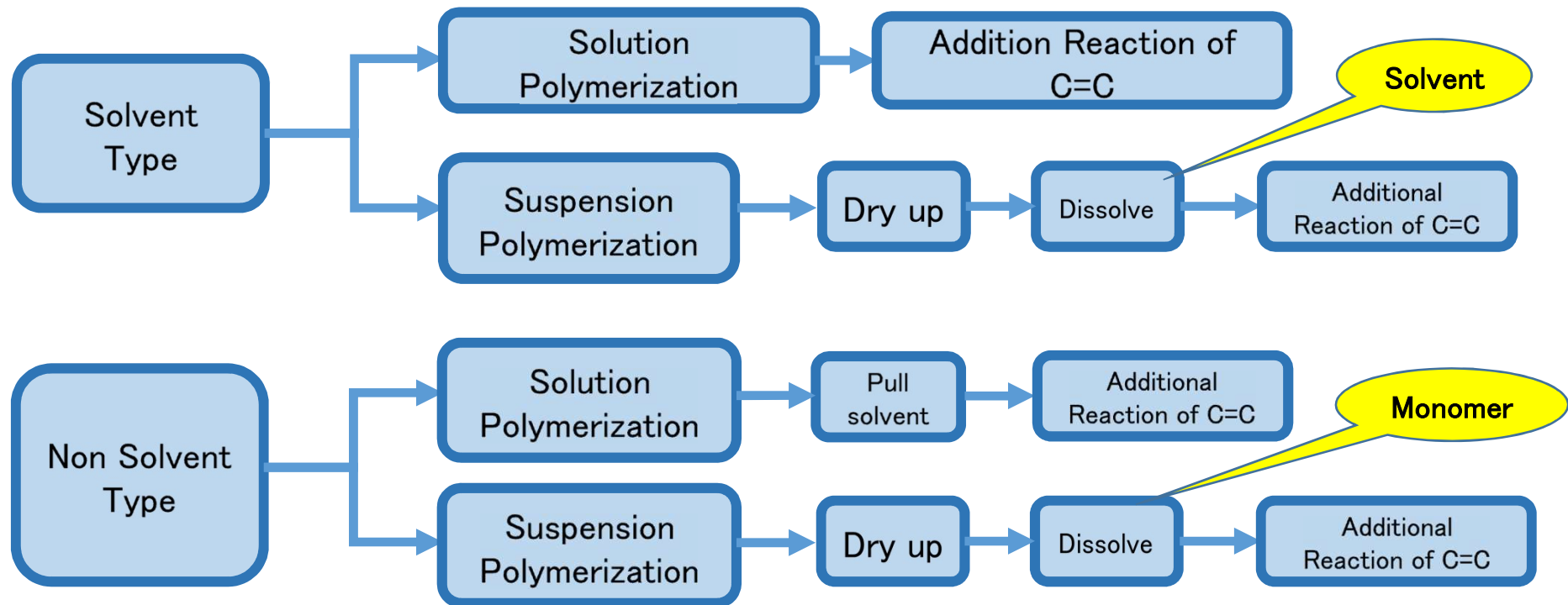
By UV + Photoinitiator, Heat + Peroxide, curing reaction occurs at C=C.

Cross-links are made at Interpolymer, Intrapolymer

Insoluble, Non-solubility gel



Manufacturing method of ART CURE



Non Solvent type ART CURE

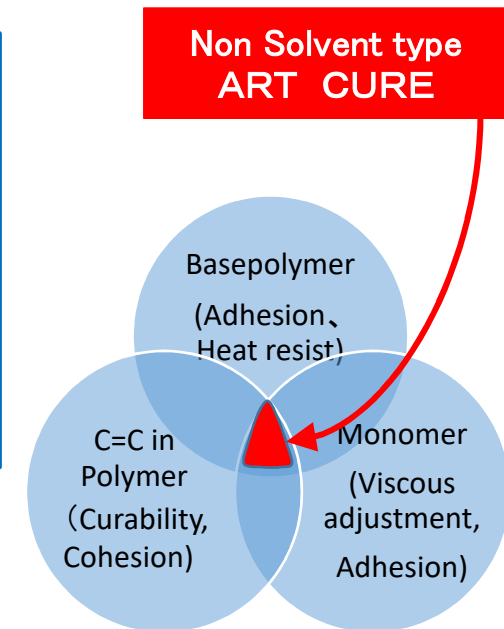
What is the merits of Non Solvent type Acrylacrylate?

- ☆ Drying process can be omitted
 - ⇒ Cost down
 - ⇒ Applicable to parts weak to heat

- ☆ Easy to thicken
 - ⇒ High Property (for example, PSA)

- ☆ we can take both of the property from monomer and polymer.

Application of
Negami's original
Suspension
Polymerization
Technology
⇒ Other companies
cannot imitate the
product easily.



ART CURE LINE UP

ART CURE OAP-5000

- ~ Good Adhesion Glade to Organic Substrate (Solution) ~
 ~ Good compatibility for various oligomer ~

N.V.	Solvent	Basepolymer Mw	Basepolymer T _g	Doublebond Equivalent (g/mol)
50wt%	Butyl Acetate	15, 000	70°C	2, 000

Adherend	Treated PET (A-4300)	PC	ABS	PVC	PMMA
Adhesion (Cross Cut)	100/100	100/100	100/100	100/100	100/100
Hotwater resistance 80°C × 24Hr	No appearance change	No appearance change	No appearance change	No appearance change	No appearance change

<<Curing conditions>>

- polymer/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm²
- Thickness: 10μm

OAP-5000/Properties of formulations

Oligomer	PETA	DPHA	UN-901T	UN-904	UN-3320HA
OAP-5000:each oligomer=1:1(Dry ratio)⇒10μm Coating on Treated PET(100μm)					
UV-cured film	Colorless Transparent	Colorless Transparent	Colorless Transparent	Colorless Transparent	Colorless Transparent
Adhesion	100/100	100/100	100/100	100/100	100/100
Pencil Hardness	2H	3H	H	H	H
Curling	No	No	No	No	No

Shows good compatibility with many oligomers, improves adhesion to substrates, and has the effect of suppressing curl.

<<Curing conditions>>

- polymer/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm²
- Thickness: 10μm

Expected Use

- ★ Primer to UV coatings for Plastics...
- ★ Adhesion imparting agent

ART CURE MAP-4050,7000

~ Good Adhesion Glade to Inorganic Substrate (Solution) ~

Product Name	N.V.	Solvent	Acid Value(Polymer) mgKOH/g	Basepolymer Mw	Basepolymer Tg	Doublebond Equivalent (g/mol)
MAP-4050	40%	PGMEA/ PGME	Ca.90	30, 000	31°C	10, 000
MAP-7000	32%	PGMEA/ PGME	Ca.60	100, 000	78°C	1, 000

<<Adhesion(Cross Cut)>>

Product Name	Glass	SUS	Al	Fe	Cu	Si(wafer)	Mo	COP
MAP-4050	100/100	100/100	100/100	100/100	100/100	100/100	95/100	90/100
MAP-7000	100/100	100/100	100/100	100/100	100/100	100/100	-	-

<<Curing conditions>>

- polymer/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm²
- Thickness: 10μm

Expected Use

- ☆Photoresist Material for Glass ,Metal Substrate(Adhesion,Development)
- ☆Primer to UV coatings for Glass,SUS,etc...
- ☆Adhesion imparting agent

ART CURE RA-4706

~ High elongation, high chemical resistance grade ~

N.V.	Solvent	Basepolymer Mw	Basepolymer Tg	Doublebond Equivalent g/mol
35%	Butyl Acetate	50, 000	96°C	1, 000

Mechanical properties	Tensile Elongation(%)	Adhesion (Cross Cut)	PC	Treated-PET (A-4300)	chemical resistance	NEUTROGENA® (r.t. × 1Hr)
	Ca.200% (150°C)		100/100	100/100		No appearance change

<<Curing conditions>>

- polymer/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm²
- Thickness: 10μm

Expected Use

- ☆Decorative molding film
- ☆Adhesion imparting agent

ART CURE RA-4101

~ Heat and Chemical resistance Grade ~

N.V.	Solvent	Acid Value(Polymer) mgKOH/g	Basepolymer Mw	Basepolymer T _g	Doublebond Equivalent g/mol	Temp. of tackless (uncured)
25%	PGME	Ca.80	30, 000	190°C	350	>200°C

Chemicals	MEK	Toluene	IPA	10%-HClaq	detergent
Method	Immersing cured film in each solvent for 3 days at r.t..			Dropping each agent on a cured film for 30 minite at r.t..	
Appearance	No change	No change	No change	No change	No change
Weight	No change	No change	No change	—	—

<<Curing conditions>>

- polymer/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm²
- Thickness: 10μm

Expected Use

- ☆Tack-Free Hard Coating by blending Urethaneacrylate Oligomer.
- ☆Heat &Chemical resistance coating material
- ☆Heat &Chemical resistance Photoresist material

ART CURE MAP-2801

~ Good Adhesion Glade to Inorganic Substrate
(Non solvent),Flexible~

Polymer Content	Diluent	Basepolymer Mw	Basepolymer Tg	Doublebond Equivalent (g/mol)
28wt%	CTFA*/4-HBA	100, 000	21°C	15, 000

*: Cyclic- Trimethylolpropane Forma lAcrylate

Properties	SUS	Glass	Al	Fe	Cu	Si(wafer)	Non treated PET	COP
Adhesion (Cross Cut)	100/100	100/100	100/100	100/100	100/100	100/100	100/100	90/100
Peeling strength (N/25mm)	100	-	-	-	70	-	-	-

<<Curing conditions>>

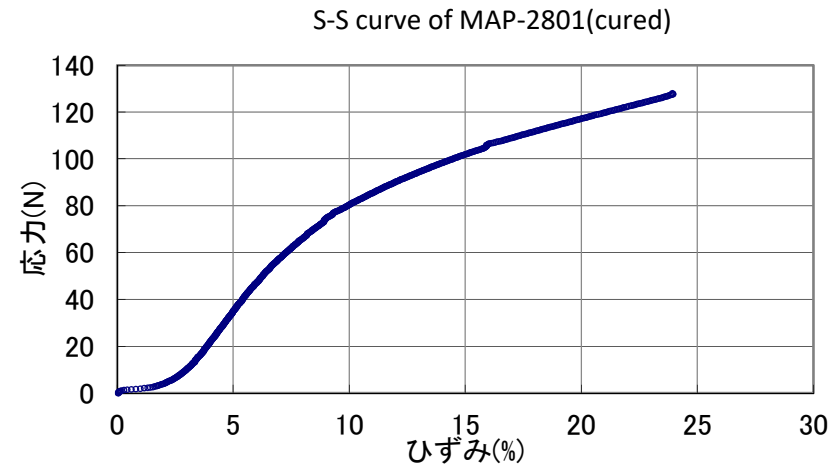
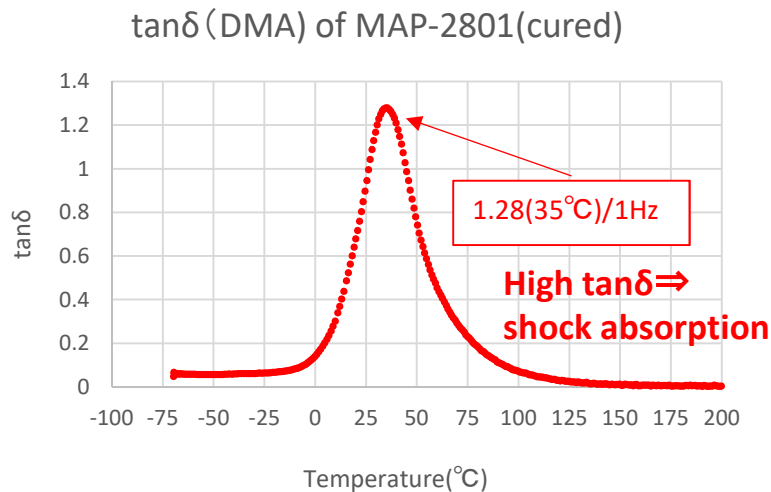
- MAP-2801/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm2
- Thickness: 10µm

Expected Use

- ☆ Adhesives for metal, glass, evaporated metal film
- ☆ Encapsulant for hardly adhesive substrate

Various properties of MAP-2801

Tensile characteristics			Cured properties			Optical characteristics		
Yield point elongation	94%	Width 10mm Thickness 700 μ m Tensile speed 200mm/min.	tan δ peak (DMA)	1.28 (35°C)	1Hz	Total Light transmittance	92%	Thickness 100 μ m
Young's Modulus	1.8MPa		Rubber hardness degrees	shore A 30	25°C	Haze	0.25	
Tensile elongation	124%		self repair function	○	Brass brush	Refractive index	1.47	Uncured (liquid)



ART CURE OAP-2531

~ Good Adhesion Glade to Inorganic Substrate
(Non solvent),High Tg)~

Polymer Content	Diluent	Basepolymer Mw	Basepolymer Tg	Doublebond Equivalent (g/mol)
35wt%	IBXA/4-HBA	20, 000	80°C	4, 000

Properties	PET	PC	PVC	ABS	PMMA	SUS	Glass
Adhesion (Cross Cut)	100/100	100/100	100/100	100/100	100/100	100/100	100/100

<<Curing conditions>>

- OAP-2531/Omnirad 184=100/3
- 140W/cm 2Pass total irradiation 1000mj/cm2
- Thickness: 10μm

Expected Use

- ☆ Adhesives for metal,glass, evaporated metal film
- ☆ Encapsulant for hardly adhesive substrate