

# Product Information

## UV Cure Resin Coatings

# Dow Corning Toray

## AY 42-150, AY 42-151

### FEATURES

- can make a hard film cured by UV irradiation
- provide protective coatings on plastic film

### BENEFITS

- gives mar resistance and water repellency
- provides surface slipperiness
- Antifouling properties

### COMPOSITION

- Propylenglycol monomethylether and methylethylketone solution of silicone organic hybrid resin

### UV Cure Resin Coatings

#### APPLICATIONS

- *Dow Corning Toray* AY 42-150, AY 42-151 can make a hard film cured by UV irradiation, which gives mar resistance, water repellency, surface slipperiness and antifouling properties. It is mainly applied for protective coatings on plastic films.
- *Dow Corning Toray* AY 42-150, AY 42-151 can be applied as protective films used for LCD/PDP, large-size displays and optical device protective films used for touch panels, DVD and blue-ray disks.
- *Dow Corning Toray* AY 42-151 is more suitable for thick film. Film thickness after curing is 2-5 $\mu$ m for AY 42-150 and 5-10 $\mu$ m for AY 42-151.

#### TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

CTM	Property	Unit	Value	
			AY 42-150	AY 42-151
0176	Appearance		clear-pale yellow	clear-pale yellow
0001A	Specific Gravity at 25°C(77°F)		1.05	1.05
0004	Viscosity at 25°C(77°F)	mm <sup>2</sup> /s	7	7
	Non Volatile Content	%	36	40
	Solvent		PGM <sup>1</sup>	PGM <sup>1</sup> , MEK <sup>2</sup>

1) Propylenglycol monomethylether

2) Methylethylketone

#### DESCRIPTION

*Dow Corning Toray* AY 42-150, AY 42-151, silicone-organic hybrid resin coatings, which can make hard films cured by UV irradiation. It is mainly applied for protective coatings on plastic films and provides mar resistance, water repellency, surface slipperiness and antifouling properties.

#### HOW TO USE

##### Film Forming Process

Coating- coat on substrate by spin-coater, roll coater, applicator, spraying, dipping or brushing.  
Drying- 80 °C, 5 mins for solvent volatilization or room temperature for 30mins.

UV Curing-normally using high/middle pressure Hg lamp. Expose UV light about 300mJ/cm<sup>2</sup> for 3 $\mu$ m film and 400mJ/cm<sup>2</sup> for 5 $\mu$ m film. Double UV light is suggested if film hardness is low.

##### Film Properties

<Application example>

Substrate: Lumirror® T-60  
(PET Film, Toray Industries Inc.)  
PET film thickness: 188 $\mu$ m  
Film thickness: 3 $\mu$ m

• **Film properties of AY 42-150, AY 42-151**

Properties	Test methods (conditions)	PET Film			
		AY 42-150	AY 42-151	Acryl	No coating
Water contact angle	Automatic Contact Angle Tester	98°	98°	66°	72°
Mar resistance (Tabor test)	1.0kg weight, 100 round	$\Delta H^{(1)}=9$	$\Delta H=7$	$\Delta H=24$	$\Delta H=53$
Mar resistance (Steel Wool Test)	#0000 500g weight 30 times rubbing	$\Delta H=0$	$\Delta H=0$	$\Delta H=3$	$\Delta H=27$
Pencil hardness (on PET)	JIS K5600	4H	4H	3H	3H
Pencil hardness (on SUS)	JIS K5600	7H	8H	4H	-
Curl Height	120 $\mu$ m TAC film <sup>(2)</sup>	6mm	2mm	-	-
Acid Durability	5% H <sub>2</sub> SO <sub>4</sub> aq. 25°C×24hrs	NP <sup>(3)</sup>	NP	NP	NP
Base Durability	5% NaOH aq. 25°C×24hrs	NP	NP	NP	NP
Adhesion	JIS K 5600 Cross Cut	100/100	100/100	100/100	-
Solvent Durability	Ethanol, Acetone, Toluene, Ethyl Acetate, 25°C×24hrs	NP <sup>(3)</sup>	NP	NP	NP
Antigraffiti Performance	Marker pen drawing test	Ink Repelling	Ink Repelling	No Repelling	No Repelling
Ink Removal Performance	Wipe after drawing test	Easy to Clean	Easy to Clean	Hard to clean	Hard to clean

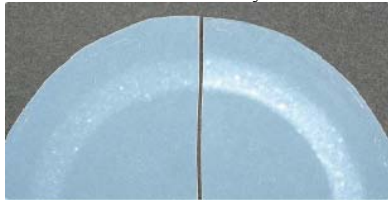
(1)  $\Delta H$ : film transmittance loss at 550nm before/after test

(2) Average edge height after coating on 10 cm x 10 cm size TAC film and UV irradiation.

(3) NP: no problem with appearance

• **Comparison after tabor test**

AY 42-150 on PET      Acryl on PET



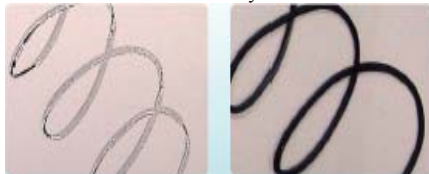
• **Comparison of water contact angle**

AY 42-150 coated      Acrylic UV resin coated



• **Comparison of marker pen drawing test**

AY 42-150 coated      Acrylic UV resin coated



**HANDLING PRECAUTIONS**

Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is

available on the Dow Corning website at [www.dowcorning.com](http://www.dowcorning.com). You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

For further information, please see our website, [www.dowcorning.com](http://www.dowcorning.com) or consult your local Dow Corning representative.

**USABLE LIFE AND STORAGE**

When stored at or below 25°C (77°F) in the original unopened containers, this product has a usable life of 12 months from the date of production.

**PACKAGING**

This product is available in 17 kg cans.

**LIMITATIONS**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**HEALTH AND ENVIRONMENTAL INFORMATION**

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

**LIMITED WARRANTY  
INFORMATION - PLEASE  
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