

# KCC SILICONE PSA & Release Coating

New world | New leader | New face



## PSA & Release Coating

KCC SILICONE PSA/RLC CATALOG



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We are reaching out to the world  
with quality and technology

***A precision chemical corporation growing rapidly based on customer's confidence***

With state-of-the-art technology and ultra-modern production facilities, KCC seeks the perfection in the quality of its products and customer services.

Each and every product that it introduces to its customers on the marketplace is always the result of creative and intensive R&D activities satisfying the diversified customer needs.

KCC always remains deeply committed to ever upgrading the living environment by leading the building and industrial materials industry through continuous research and development precisely reflecting the market trends and user-wishes.

***KCC Silicone Corporation Service Network***



*About KCC Silicone*



We are reaching out to the world  
with quality and technology

**We produce and distribute various silicone products including silicone rubber, sealants for construction and industrial use, silane, silicone oil, silicone emulsion, and silicone dispersion products.**

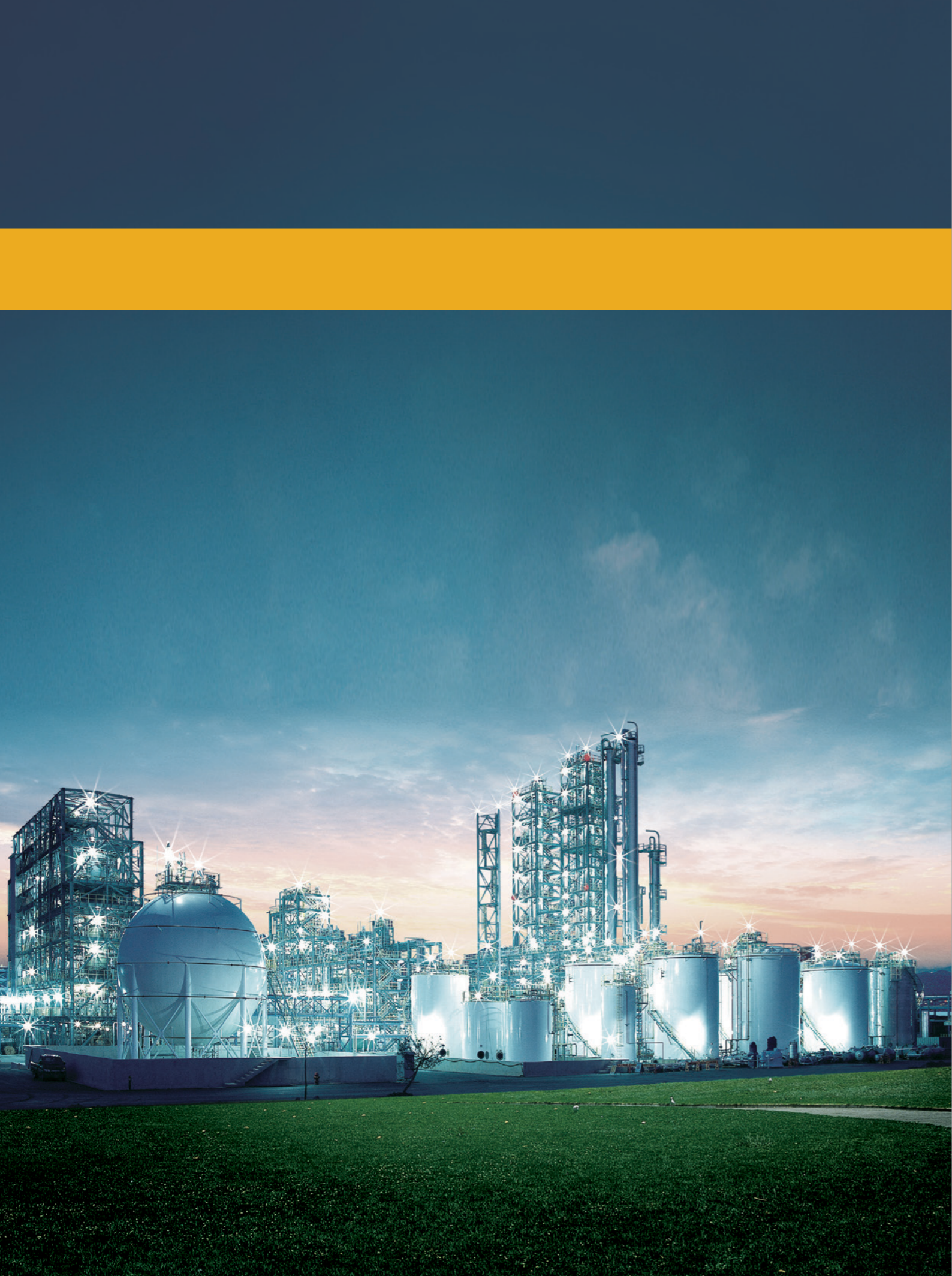
We produce and distribute various silicone products including silicone rubber, sealants for construction and industrial use, silane, silicone oil, silicone emulsion, and silicone dispersion products.

Today's building materials are essential blends or composites of organic and inorganic chemical products. KCC takes pride in being a market leader in these particular chemical fields. In the past, the two divisions within KCC operated separately, but they are now merged together to provide enhanced synergy, cost efficiency, and service to our multitude of highly valued customers. Korea Chemical Co. Ltd., that specialized in organic chemical products (mainly paints and resins for paints) has merged with Kumgang Chemical Co. Ltd., into a single legal entity entitled Kumgang Korea Chemical Co. Ltd. The company is known as KCC for short. The technical integration of the organic and inorganic chemistry business under the same roof ensures better products, better technical service, and more competitive prices. KCC continues to be a worldwide industrial player in the 21st century and continues to invest in innovative R&D activities.

### Introduction to KCC Silicone Business

KCC constructed the first silicone monomer production plant in Korea in 2003. KCC has made great R&D advances for the silicone industry with researchers specialized in the field of silicone monomer, polymer synthesis, and the development of applicable products. Thus, KCC has completed the development in the silicone-related field successfully. KCC is ready to produce and provide silicone products including silicone sealant for construction, industrial RTV, silane, fluids, emulsion and dispersion, as well as rubber.

Moreover, KCC makes contributions to promote the competitive power of our customers by supplying products corresponding to their needs and by concentrating our energies on R & D activities.



# Pressure Sensitive Adhesives Introduction



## KCC Silicone Pressure sensitive adhesives

Silicone Pressure sensitive adhesives are highly functional adhesives that have the unique Features of silicone such as heat resistance, cold resistance, water resistance, electrical insulation, ozone resistance, low inflammability, chemical inertness, and anti-pollution. Silicone PSAs have good adhesive properties at high and low temperature and especially, perform outstanding adhesion to most of all substrates which other organic adhesives are difficult to adhere to, such as polyethylene, polypropylene, polyester, fluoric resin and silicone rubber.

## Features of KCC Silicone

Develops various types of new applications that reflect customer's target specifications through joint development.

Provides technical support and runs joint projects in partnership with our customers.

Develops customized products for a specific group of customers.

# Pressure Sensitive Adhesives Peroxide Cure PSA

## Peroxide Cure PSA

Product	Viscosity (25°C, cP)	Solid content (%)	Adhesion (gf/in)	PET / Si Thickness (µm)	Ball Tack (Ball No.)	Heat Resistance (°C)	Features
SG6001Z	35,000	56	850	25 / 25	# 32	230	General Purpose
SG6020Z	100,000	62	1,100			250	High Adhesion
SG6040Z	50,000	56	850			280	Good Heat Resistance
SG6060Z	135,000	62	950			250	High Solid

\* Packing: 180 kg (drum)

## Application

- General Masking Film & Splicing Tape
- General Insulation Tape
- PCB Process Masking Film



# Pressure Sensitive Adhesives Addition Cure PSA (1)

## Addition Cure PSA

Classification	Product	Viscosity (25°C, cP)	Solid Content (%)	Adhesion (gf/in)	PET / Si Thickness (µm)	Features
Low adhesion PSA	SC3300L	70,000	100	< 1	50 / 25	Solventless
	SC6460A	70,000	100	< 1	50 / 25	Solventless
	SC6470A	7,000	100	< 1	50 / 25	Solventless & Low Viscosity
	SG6403A	80,000	60	1	75 / 10	Solvent Base & High tack
	SG6481A	40,000	50	< 1	50 / 25	Solvent Base & Good wetting
Middle & High adhesion PSA	SG6320A	15,000	60	200	50 / 25	Middle Adhesion
	SG6500A	25,000	60	950	25 / 30	General Purpose
	SG6501A	25,000	60	950	25 / 30	Good Heat Resistance
	SG6510A	15,000	58	900	25 / 30	Hard Surface Type (Low Tack)
	SG6550A	15,000	60	850	25 / 30	Low Tack & High Adhesion
	SG6710A	30,000	60	900	25 / 30	Soft Surface Type (High Tack)
	SG6715A	8,000	58	1,500	25 / 30	High Adhesion
	SG6920A	9,000	60	220	75 / 10	Middle Adhesion for Foldable display
	SG6970A	30,000	60	750	25 / 22	High Adhesion for Silicone Rubber

\* Packing: 180 kg (drum)

# Pressure Sensitive Adhesives Addition Cure PSA (2)

## Low Temperature Cure PSA

Product	Viscosity (25°C, cP)	Solid Contents (%)	Adhesion (gf/in)	PET / Si Thickness (µm)	Features
SG6207A	30,000	60	< 1	50 / 25	Low adhesion
SG6237A	15,000	60	350		Middle adhesion
SG6277A	10,000	58	750		High adhesion

\* Packing: 180 kg (drum)

## Low Migration PSA

Product	Viscosity (25°C, cP)	Solid Contents (%)	Adhesion (gf/in)	PET / Si Thickness (µm)	SAS(%) (50°C x 3days)
SG6802A	70,000	60	1	50 / 10	90
SG6803A	85,000	70	< 1		81
SG6810A	70,000	60	10		84

\* Packing: 180 kg (drum)

## Bio PSA

Product	Viscosity (25°C, cP)	Adhesion (gf/in)	PET / Si Thickness (µm)	Tack		Applications
				Probe Tack (g)	Finger-Touch	
SC6150A	10,000	75	50 / 70	175	Low	Band / Patch
SC6160A	6,000	30		70	Middle	Wound care / Band
SC6170A	6,000	65		180	High	Wound care / Band
SC6181A	8,000	75		220	High	Devices fixation

\* Packing: 180 kg (drum)

# Pressure Sensitive Adhesives Additives

## Primer

Product	Viscosity (25°C, cP)	Solid Contents (%)	Solvent	Packing
SG6733A	13,000	30	Toluene	18kg (can)
SG6734A	13,000	30	Xylene	18kg (can)

## Adhesion Promoter additives

Product	Viscosity (25°C, cP)	Solid Contents (%)	Solvent	Features	Packing
SG3951C	10	50	Xylene	For improving adhesion	18kg (can)
SG3955C	10	50	Xylene	For improving adhesion	18kg (can)

## Anchorage additives

Product	Viscosity (25°C, cP)	Features	Packing
SC0050S	30	For Urethane Primer Treated PET	1kg (can)
SC0052S	25	For Corona Treated PET	1kg (PE can), 0.5kg (Bottle)

## Crosslinkers

Product	Viscosity (25°C, cP)	Features	Packing
SC0016B	23	General Purpose	1kg (PE can)
SC0030B	3	For Medical PSA	1kg (PE can)

## Catalyst

Product	Viscosity (25°C, cP)	Solid Contents (%)	Features	Packing
SK0010C	200	100	Pt. 5,000ppm	180g (PE can) 3.6kg (PE can)

# Pressure Sensitive Adhesives Guide Formulation For Masking Film (1)

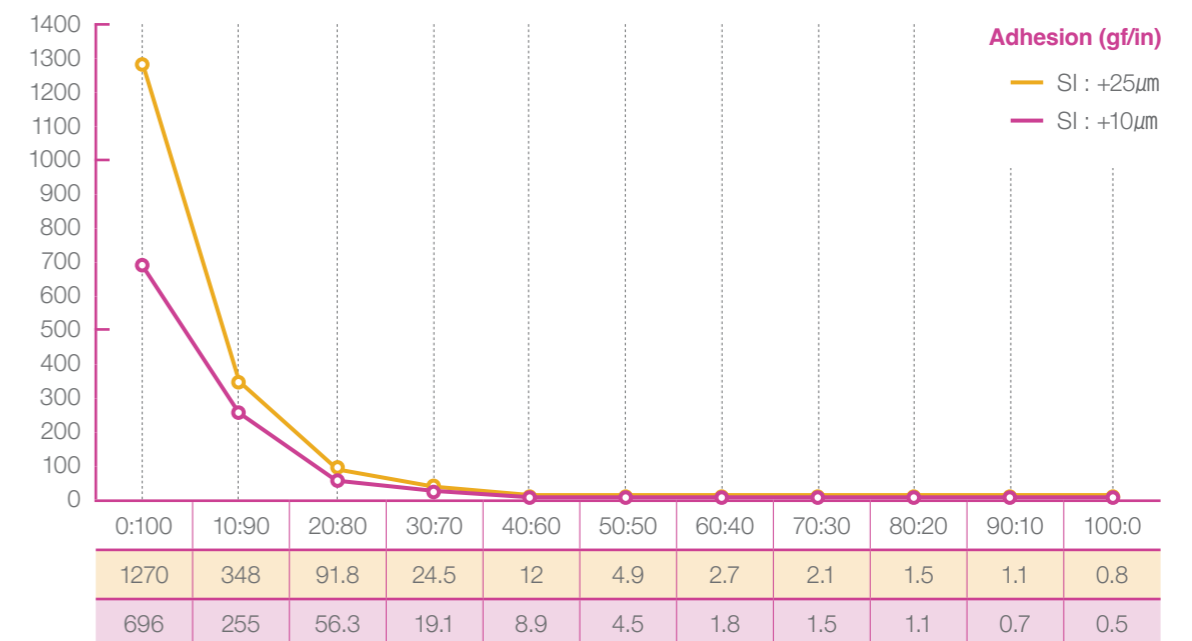
## SC3300L & SG6500A

### Test Condition

- Base Film : 50µm PET
- Substrate : SUS304
- Curing Condition : 140°C x 2min
- Si Thickness : +25µm & +10µm
- Formulation  
SC3300L (0~100) : SG6500A (100~0) : SC0016B (0.4~1.1) : SC0050S (0.7) : SK0010C (1.0)

Blending ratio (wt%)	SC3300L	0	10	20	30	40	50	60	70	80	90	100
	SG6500A	100	90	80	70	60	50	40	30	20	10	0
Peel adhesion (gf/in)	SC0016B	0.4	0.47	0.54	0.61	0.68	0.75	0.82	0.89	0.96	1.03	1.1
	SI : +25µm	1270	348	91.8	24.5	12	4.9	2.7	2.1	1.5	1.1	0.8
SI : +10µm	696	255	56.3	19.1	8.9	4.5	1.8	1.5	1.1	0.7	0.5	

## SC3300L : SG6500A Blending Ratio Adhesion



\* The above data is measured in the laboratory of KCC Silicone Corporation

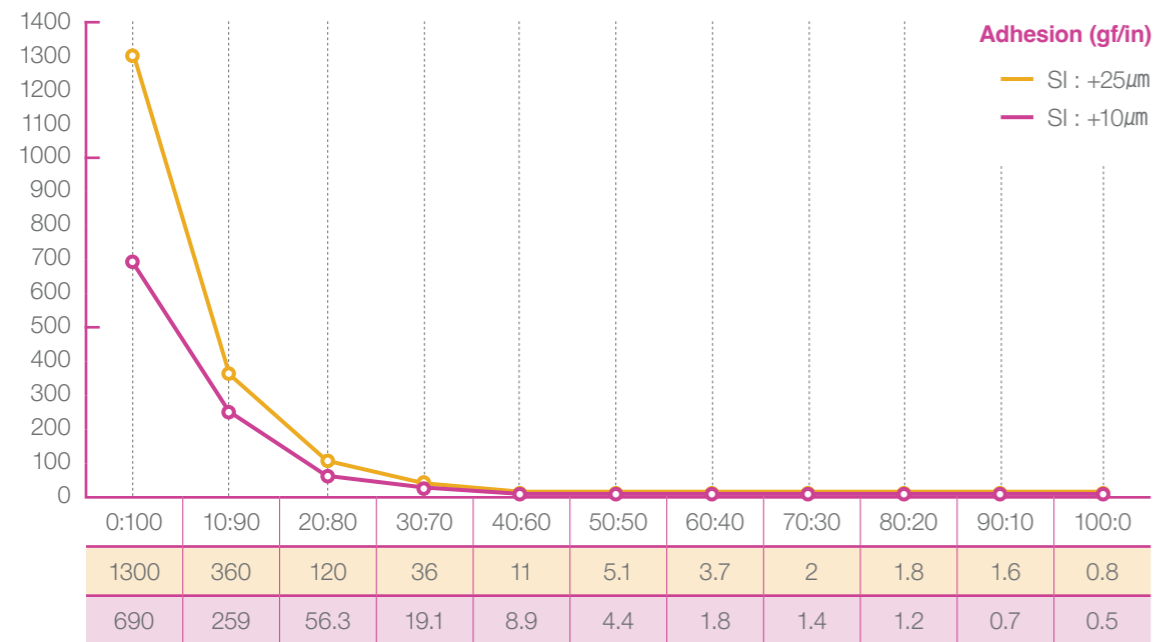
# Pressure Sensitive Adhesives Guide Formulation For Masking Film (2)

## SC3300L & SG6501A

### Test Condition

- Base Film : 50 $\mu$ m PET
- Substrate : SUS304
- Curing Condition : 140 $^{\circ}$ C x 2min
- Si Thickness : +25 $\mu$ m & +10 $\mu$ m
- Formulation  
SC3300L (0~100) : SG6501A (100~0) : SC0016B (0.4~1.1) : SC0050S (0.7) : SK0010C (1.0)

### SC3300L : SG6501A Blending Ratio Adhesion



\* The above data is measured in the laboratory of KCC Silicone Corporation

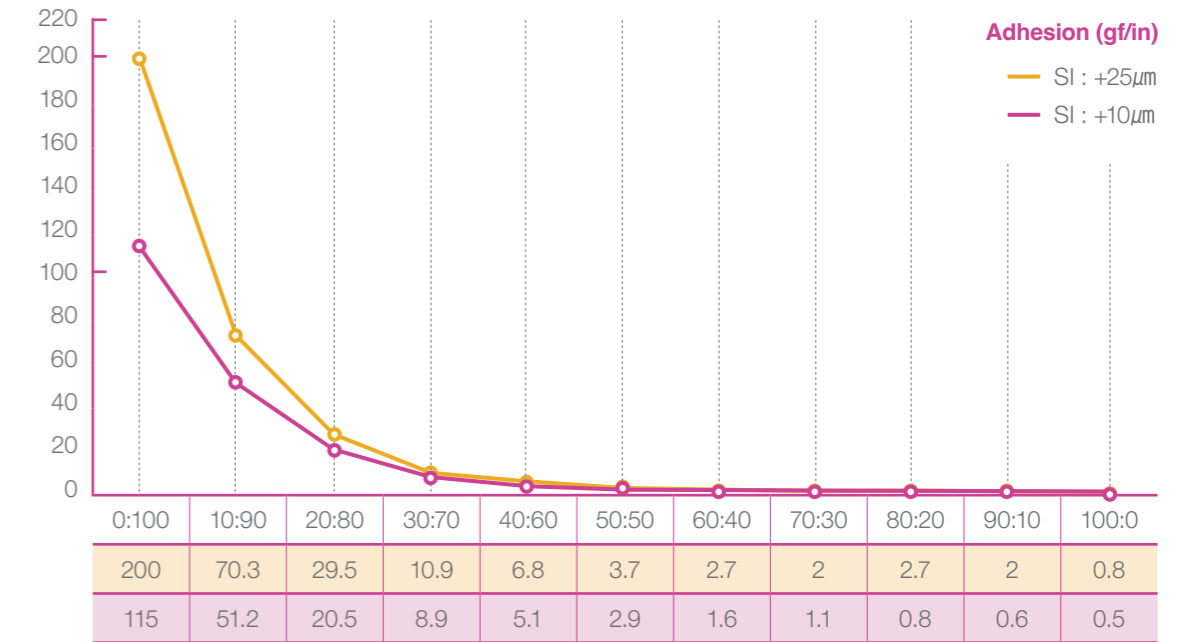
# Pressure Sensitive Adhesives Guide Formulation For Masking Film (3)

## SC3300L & SG6320A

### Test Condition

- Base Film : 50 $\mu$ m PET
- Substrate : SUS304
- Curing Condition : 140 $^{\circ}$ C x 2min
- Si Thickness : +25 $\mu$ m & +10 $\mu$ m
- Formulation  
SC3300L (0~100) : SG6320A (100~0) : SC0016B (0.4~1.1) : SC0050S (0.7) : SK0010C (1.0)

### SC3300L : SG6320A Blending Ratio Adhesion



\* The above data is measured in the laboratory of KCC Silicone Corporation

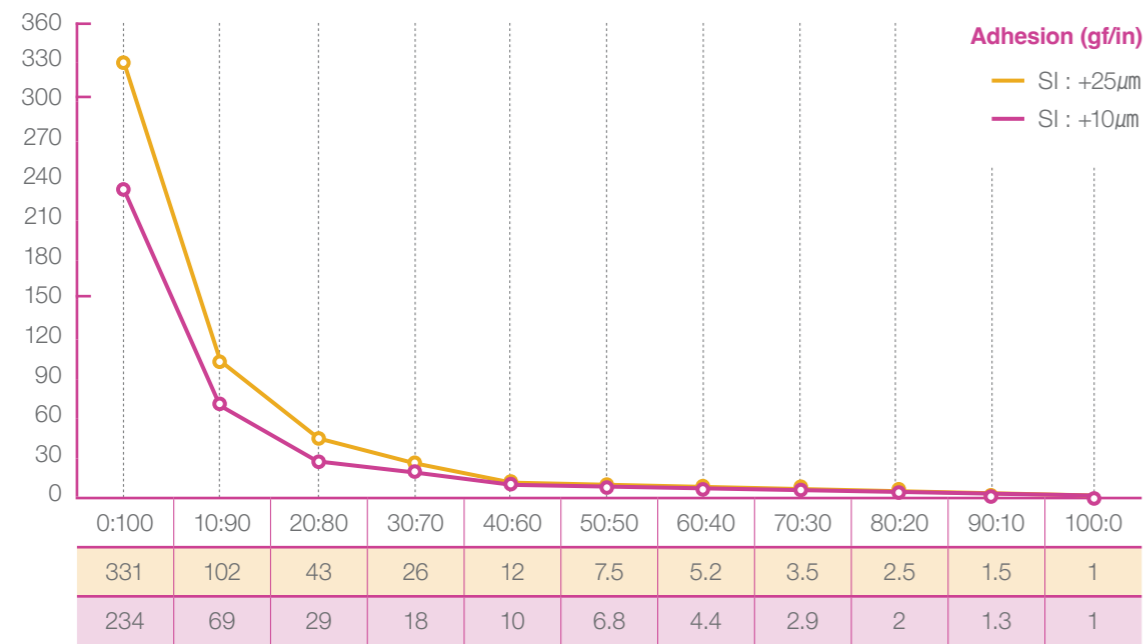
# Pressure Sensitive Adhesives Guide Formulation For Low Temp. Cure (1)

## SG6207A & SG6237A

### Test Condition

- Base Film : 50 $\mu$ m PET
- Substrate : SUS304
- Curing Condition : 80 $^{\circ}$ C x 2min
- Si Thickness : +25 $\mu$ m & +10 $\mu$ m
- Formulation  
SG6207A (0~100) : SG6237A (100~0) : SK0010C (1.0)

### SG6207A : SG6237A Blending Ratio Adhesion



\* The above data is measured in the laboratory of KCC Silicone Corporation

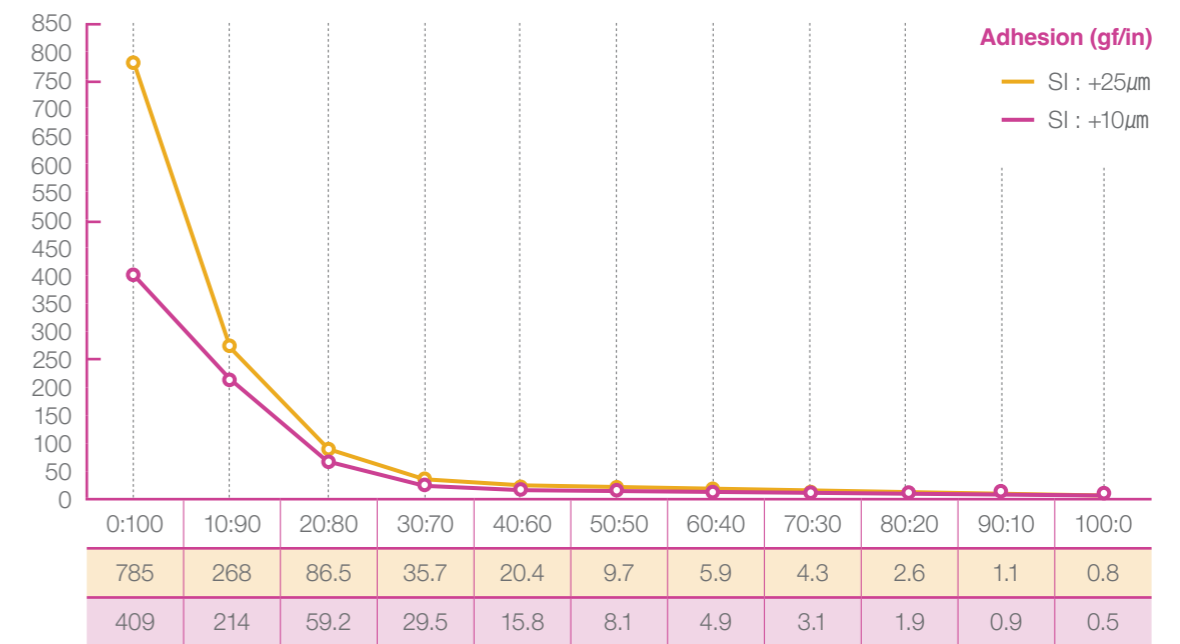
# Pressure Sensitive Adhesives Guide Formulation For Low Temp. Cure (2)

## SG6207A & SG6277A

### Test Condition

- Base Film : 50 $\mu$ m PET
- Substrate : SUS304
- Curing Condition : 80 $^{\circ}$ C x 2min
- Si Thickness : +25 $\mu$ m & +10 $\mu$ m
- Formulation  
SG6207A (0~100) : SG6277A (100~0) : SK0010C (1.0)

### SG6207A : SG6277A Blending Ratio Adhesion



\* The above data is measured in the laboratory of KCC Silicone Corporation



# Pressure Sensitive Adhesives

## High Adhesion PSA Selection Guide

Product	Viscosity (cP)	Solid contents (%)	Adhesion (gf/in.)	PET / Si Thickness (μm)	Probe Tack (g)	Release force for fluorine film (gf/in)	Features
SG6500A	25,000	60	950	25 / 30	350	5.5	General Purpose
SG6501A	25,000	60	950		350	2.7	Good Heat Resistance
SG6510A	15,000	58	900		200	2.2	Hard Surface Type (Low Tack)
SG6550A	15,000	60	850		20	1	Low Tack
SG6710A	30,000	60	900		500	6.8	High Tack
SG6715A	8,000	58	1,500		200	< 1.0	High Adhesion

# Release Coatings

## Introduction



### KCC Silicone Release Coating

Silicone Release Coating Provide excellent release, water repellency, heat resistance, cold resistance, water resistance, chemical resistance, subsequent adhesion, and lubrication properties. Silicone Release Coating are widely used for release paper like tapes and labels, release films and synthetic rubbers.

KCC solventless & solvent-based silicone release coating materials, which includes a choice of solventless polymer, solvent dispersion, controlled release additive, catalyst components.

# Release Coatings

## Introduction

### Addition-Cure Solventless/Solvent-based

Classification	Product	Viscosity (25°C, cP)	Solid Content (%)	Catalyst Type	Release Force	Features & Applications
Solventless Type	SC1011A	200	100	Pt	Medium	Low Viscosity Label & Tape Coating Easy Release
	SC1033A	350	100	Pt	Medium	Standard Viscosity Label & Tape Coating Easy Release
	SC1035A	350	100	Pt	Medium	Standard Viscosity PET Film Coating Easy Release
Solvent Type	SG1100A	1,100	30	Pt	Medium	Low Viscosity Easy Release
	SG1130A	13,000	30	Pt	Medium	-
	SG1160A	50,000	60	Pt	Medium	High Solid Easy Release
	SG1210A	1,100	30	Pt	Low	Standard Slip Type Easy Release
	SG1250A	15,000	30	Pt	Ultra Low	Slip Type High Coat Weight Low Release
	SG1310T	17,500	30	Pt	Medium	Easy Release
	SG1320A	1,100	30	Pt	Tight	High Release
	SG1410A	15,000	30	Pt	Medium	Easy Release
	SG1910A	550	13	Pt	-	Writing on release coating surface

# Release Coatings

## Additives

### Additives

Classification	Product	Viscosity (25°C, cP)	Solid Content (%)	Features & Applications
Controlled Release Additive	SG1500A	55	51	High efficiency for high release force range of modification
	SC0062A	510	100	High efficiency for low release force range of modification
Crosslinker	SC0016B	23	100	Standard Cross linker
	SC0021B	98	100	Fast Cure Type Cross linker
Anchorage Additive	SC0050S	30	100	Standard Anchorage Additive
	SC0052S	25	100	Corona PET Anchorage Additive
Slip Additive (Anti-Blocking Agent)	SC0073A	25,000	100	Provides the same slip properties as standard slip type SG1210A
	SC0075A	25,000	100	Provides the same slip properties as slip type SG1250A
Pt Catalyst	SK0011C	200	100	Pt. 5,000ppm

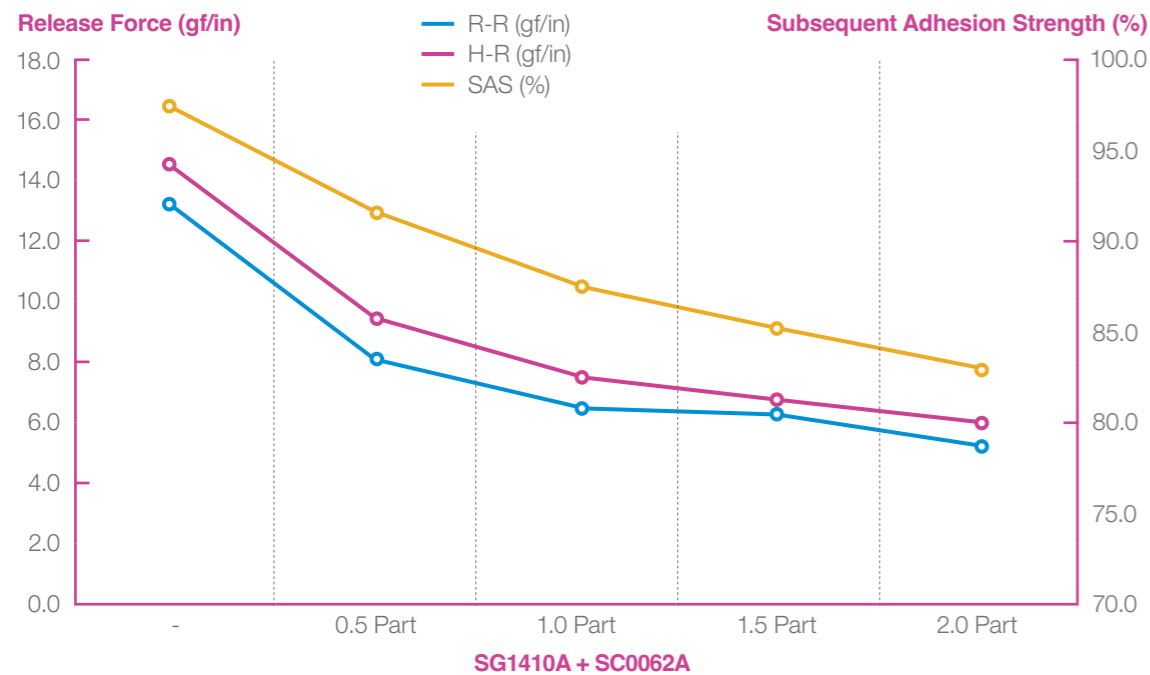
# Release Coatings Guide Formulation for Low Release Additive

## Test Condition

- Substrate : 50 $\mu$ m Corona PET
- Coat Weight : 0.2  $\pm$  0.02g/m<sup>2</sup>
- Curing : 140°C x 10sec [Automatic Laboratory oven]
- Test Tape : Release Force [Tesa 7475], Subsequent Adhesion Strength [Nitto 31B]

SG1410A	SC0062A	Release Force (gf/in)		Subsequent Adhesion (%) (25°C*24hr)
		Room Temperature (25°C*24hr)	High Temperature (50°C*24hr)	
100	0	13.2	14.5	97.5
100	0.5	8.2	9.6	91.7
100	1	7.3	8.5	87.7
100	1.5	6.4	6.8	85.3
100	2	5.3	6.1	83.2

## Low Release Performance



\* The above data is measured in the laboratory of KCC Silicone Corporation

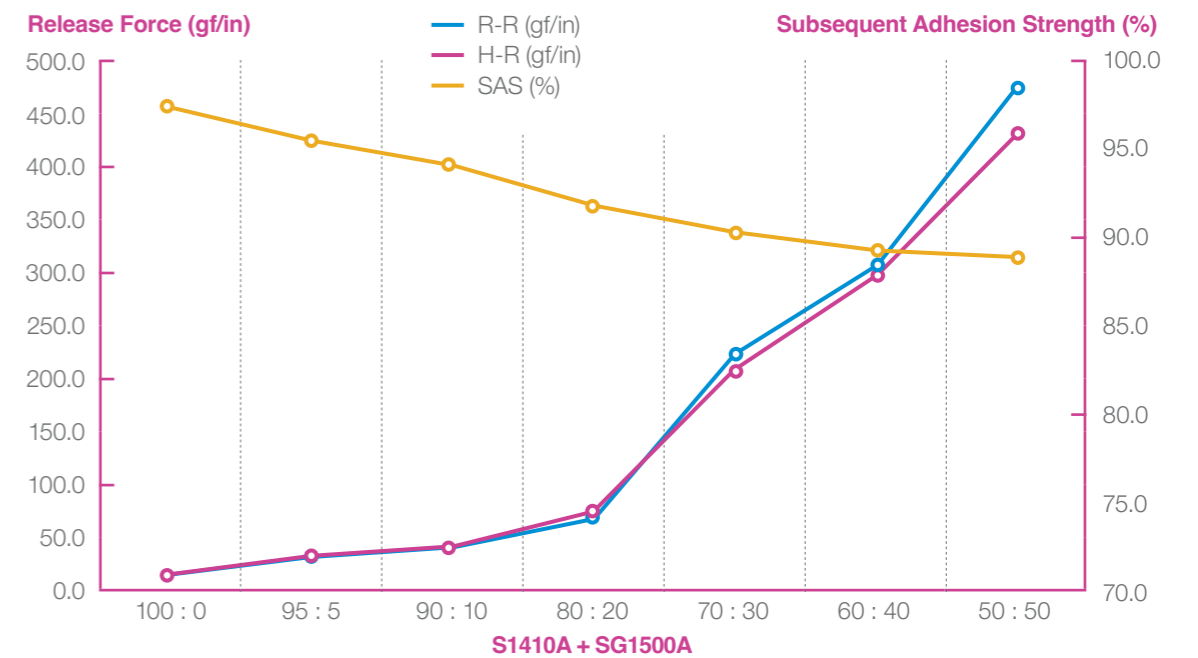
# Release Coatings Guide Formulation for High Release Additive

## Test Condition

- Substrate : 50 $\mu$ m Corona PET
- Coat Weight : 0.2  $\pm$  0.02g/m<sup>2</sup>
- Curing : 140°C x 10sec [Automatic Laboratory oven]
- Test Tape : Release Force [Tesa 7475], Subsequent Adhesion Strength [Nitto 31B]

SG1410A	SG1500A	Release Force (gf/in)		Subsequent Adhesion (%) (25°C*24hr)
		Room Temperature (25°C*24hr)	High Temperature (50°C*24hr)	
100	0	13.2	14.5	97.5
95	5	30.4	32.8	95.6
90	10	39.4	40.6	94.2
80	20	68.5	72.8	92.0
70	30	221.0	206.8	90.3
60	40	303.7	296.0	89.5
50	50	475.7	430.0	88.9

## High Release Performance



\* The above data is measured in the laboratory of KCC Silicone Corporation

# Release Coatings

## Guide Formulation for Slip Release Coating

### Slip Type Release Coating

Slip type additive is used with a silicone polymer, allowing coating with a high coating weight without blocking.

This feature enables low release force and high subsequent adhesion.

Product	Type	Appearance	Viscosity (25°C, cP)	Solid Content (%)	Coating Weight (g/m <sup>2</sup> )	Comments
SC0073A	Additive	Hazy	25,000	100	0.6 - 1.2	With Polymer (SG1410A etc.)
SC0075A	Additive	Hazy	25,000	100	1.5 - 2.0	With Polymer (SG1410A etc.)

### Test Condition

- Substrate : 50µm Corona PET
- Coat Weight : 0.9 ± 0.02g/m<sup>2</sup>, 1.8 ± 0.02g/m<sup>2</sup>
- Curing : 140°C x 10sec [Automatic Laboratory oven]
- Test Tape : Release Force [Tesa 7475], Subsequent Adhesion Strength [Nitto 31B]

### SC0073A & SC0075A

Product	Slip Additive	Coating Weight (g/m <sup>2</sup> )	Release Force (gf/in.)			Subsequent Adhesion (%) (25°C*24Hr)
			Room Temperature (gf/in.)		High Temperature (gf/in.) (50°C*24hr)	
			Immediately	25°C*24hr		
SG1410A	SC0073A	0.9	3.2	5.3	7.2	96
SG1410A	SC0075A	1.8	1.8	2.8	4.5	96

# Release Coatings

## Fluorosilicone Release Coatings

### Fluorosilicone Release Coatings

Fluorosilicone Release Coatings FSR SC3000 offer solutions for silicone PSAs.

FSR3000 Coatings contribute to greatly improving usability and productivity without impairing the physical properties of silicone PSAs.

Product	Appearance	Viscosity (25°C, cP)	Active ingredient (%)	Features
FSR SC3000A	Clear to hazy, Slightly yellow	35,000	100	Stable Release Suitable to laminate silicone PSA films on the release liner
FSR SC3000B	Clear to hazy, Slightly yellow	450	100	Crosslinker for FSR SC3000A

### Test Condition

- Substrate : 50µm Corona PET
- Coat Weight : 0.25 ± 0.02g/m<sup>2</sup>
- Curing : 140°C x 10sec [Automatic Laboratory oven]
- Liner Aging : 70°C x 1day
- Test Tape : Release Force [Symbionic MY2G], Subsequent Adhesion Strength [Nitto 31B]

### Release Performance

Product	Release Force (gf/in)				Subsequent Adhesion (%) (25°C*24hr)
	Room Temperature (25°C*24hr)	High Temperature			
		50°C*24hr	70°C*24hr	70°C*168hr	
FSR SC3000	4.6	6.1	8.5	14.4	91.6