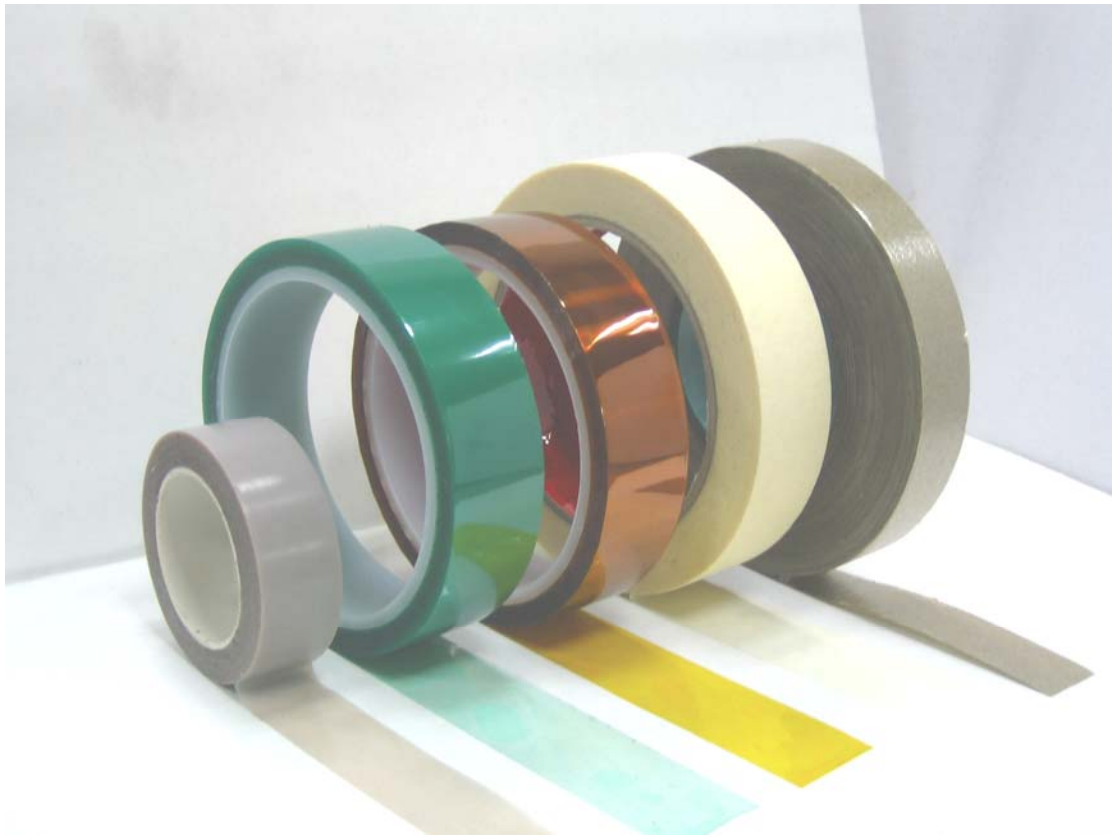




Shin-Etsu Silicone

有機硅感壓膠

**Silicone Pressure Sensitive Adhesive**



# 產品介紹及物性

## Products Descriptions & Typical Performance Properties

有機硅感壓膠對於耐熱性、耐寒性、再黏性及電氣絕緣性等都有優良的特性，在各種被著體都有良好的黏著力，信賴性高，適合用於各種膠帶及保護膜。

Silicone Pressure Sensitive Adhesive (PSA) has excellent wide temperature performance, electrical insulating property and reliability. Tapes using silicone PSA are easy to rework and have good adhesion to a wide variety of surfaces. So silicone PSA can be applied for various kinds of tapes and protective films.

### 有機硅感壓膠的固化類型及特徵

#### Cure Systems and Features of Silicone PSA

	過氧化物硬化型 BPO Cure System	附加反應硬化型 Addition Cure System
反應 Reaction	$2 \text{ Si-CH}_3 \rightarrow 2 \text{ Si-CH}_2 \cdot \rightarrow \text{ Si-CH}_2\text{-CH}_2\text{-Si}$	$\text{Si-CH=CH}_2 + \text{H-Si} \rightarrow \text{Si-CH}_2\text{-CH}_2\text{-Si}$
觸媒 Catalyst	Benzoyl Peroxide Catalyst	Platinum Catalyst
優點 Benefits	<ul style="list-style-type: none"> <li>● 不受觸媒毒影響 No cure inhibition</li> <li>● POT LIFE 長 Long pot life</li> </ul>	<ul style="list-style-type: none"> <li>● 可低溫短時間硬化：90~130°C/30秒以上 Curing at low temperature and short time：more than 90~130°C/30sec</li> <li>● 耐熱性低的基材也可使用：PET等 The backing film does not need heat resistance：PET...etc</li> <li>● 不會產生副產物或臭氣 No byproduct or smell</li> </ul>
缺點 Drawbacks	<ul style="list-style-type: none"> <li>● 硬化溫度高：150~180°C/2分鐘以上 High curing temperature：more than 150~180°C/2min</li> <li>● 基材需具備耐熱性：PTFE、PI、玻纖布等 The backing film needs heat resistance：PTFE, PI, glass fiber...etc</li> <li>● 會有過氧化物的副產物產生 Produce peroxide byproduct</li> </ul>	<ul style="list-style-type: none"> <li>● 易受觸媒毒影響 Cure inhibition happens</li> <li>● POT LIFE 短 Short pot life</li> </ul>
台灣信越矽利光產品 TSS Products	KRT 系列 KRT Series	KCT 系列 KCT Series

### 有機硅感壓膠產品物性

#### Typical Properties of Silicone PSA Products

產品名 Product	固化方式 Cure System	用途 Application	粘度 Viscosity 25°C Pa · s	固含量 Non Volatile Content %	溶劑 Solvent	觸媒 Catalyst	觸媒添加量 Catalyst Addition Quantity Wt%	架橋劑 Cross-linker
KRT-001	過氧化物型 BPO	泛用型 General purpose adhesive	110	60	Toluene	BPO	1.2	—
KRT-003	過氧化物型 BPO	泛用型 General purpose adhesive	120	60	Toluene	BPO	1.2	—
KRT-025	過氧化物型 BPO	泛用型 General purpose adhesive	80	60	Toluene	BPO	1.2	—
KRT-002	過氧化物型 BPO	雲母膠帶 Mica tape	90	60	Toluene	BPO	1.2	—
KRT-006	過氧化物型 BPO	保護膜、低黏著力控制劑 Protective film Low adhesion control agent	60	55	Toluene, IPA	BPO	1.2	—
KRT-009	過氧化物型 BPO	聚四氟乙烯耐熱膠帶 PTFE tape	110	60	Toluene	BPO	1.2	—
KRT-026	過氧化物型 BPO	高耐熱膠帶 High temperature tape	110	60	Toluene	BPO	1.2	—
KCT-7771	附加型 Addition	泛用型 General purpose adhesive	20	60	Toluene	CAT-PL-50T	0.5	X-92-122C
KCT-7720	附加型 Addition	保護膜、低黏著力控制劑 Protective film Low adhesion control agent	60	60	Toluene	CAT-PL-50T	0.5	—

※1：200°C/1hr；※2：230°C/1hr；※3：250°C/1hr

BPO type

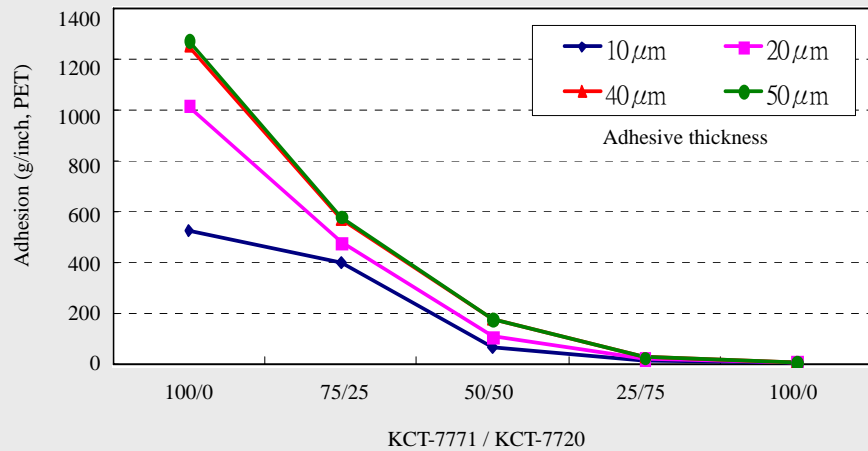
PSA/BPO = 100/1.2, cure condition：air dry/10min + 165°C/2min

Addition type

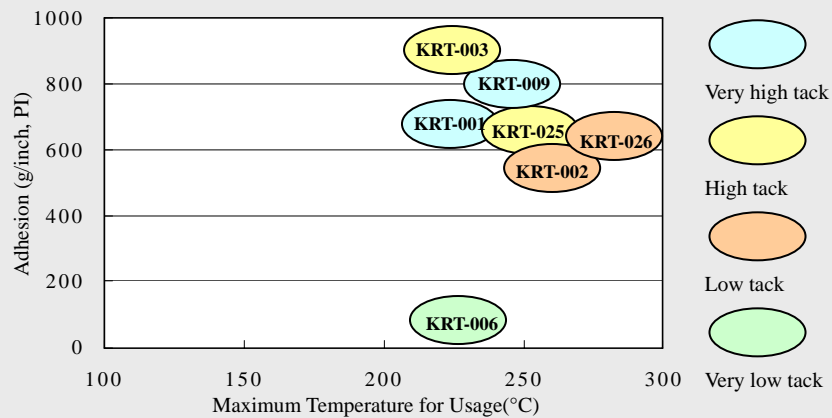
PSA/CAT-PL-50T(X-92-122C) = 100/0.5(0.11), cure condition：130°C/1min

• adhesive thickness：40 μm • backing：PI film 25 μm • substrate：SUS304 • holding power：25x25mm/1kg

■ KCT-7771/KCT-7720 混合使用時的黏著力 Adhesion of KCT-7771/KCT-7720



■ 過氧化物型感壓膠選擇表 Selection Chart of BPO Cure Type PSA



	架橋劑添加量 Cross-linker Addition Quantity Wt%	黏著力 Adhesion N/inch	保持力 Holding Power mm		Ball Tack No.	Loop Tack gf	特色 Features	黏著力 Adhesion	保持力 Holding Power	初黏力 Tack
			0.1 * <sup>1</sup>	0.5 * <sup>2</sup>						
	—	7.2	0.1 * <sup>1</sup>	0.5 * <sup>2</sup>	44	1400	高初黏力 High tack	○ good	○ good	◎ excellent
	—	9.3	0.1 * <sup>1</sup>	0.3 * <sup>2</sup>	40	1400	高黏著力 Good adhesion	◎ excellent	○ good	○ good
	—	7.2	0.1 * <sup>1</sup>	0.7 * <sup>3</sup>	40	1200	高溫保持力佳 Good high temp properties	○ good	◎ excellent	○ good
	—	6.9	0.1 * <sup>1</sup>	0.5 * <sup>3</sup>	38	900	高溫保持力佳、表面乾爽 Good high temp properties Low tack	△ moderate	◎ excellent	△ moderate
	—	1.5	0.1 * <sup>1</sup>	0.2 * <sup>3</sup>	< 16	200	低黏著力 Low adhesion	× poor	○ good	× poor
	—	7.8	0.1 * <sup>1</sup>	0.6 * <sup>3</sup>	42	1400	苯環系、高黏著力、高初黏力 Phenyl type Good adhesion and high tack	◎ excellent	○~◎ good~excellent	◎ excellent
	—	7.3	0.1 * <sup>1</sup>	0.5 * <sup>3</sup>	40	1000	高溫特性極佳 Excellent high temp properties	○ good	◎◎ excellent	△ moderate
	0.11	9.5	0.01 * <sup>3</sup>	0.06 * <sup>3</sup>	40	1500	高黏著力、高初黏力 Good adhesion and high tack	◎ excellent	◎ excellent	◎ excellent
	—	0.06	0 * <sup>3</sup>	0.01 * <sup>3</sup>	< 16	30	超低黏著 Very low adhesion	×× very poor	◎ excellent	×× very poor

(非規格值 not specified values)

# 使用方法、二液型感壓膠及底膠

## Usage, 2-Component Type PSA & Primer

### 有機硅感壓膠使用方法

#### Usage of Silicone PSA

##### 過氧化物固化型

1. 使用甲苯溶劑稀釋後，添加有機過氧化物。
2. 塗佈於基材上，在 70~90°C 溫度下風乾使溶劑揮發，在 160~200°C 的溫度上加熱 2~5 分鐘使其固化。

##### 附加固化型 (KCT-7720)

1. 以適當比例甲苯等溶劑稀釋後，添加白金觸媒 CAT-PL-50T 攪拌均勻。
2. 塗佈於基材上，在 100~130°C 溫度下加熱 1~3 分鐘使其固化。

##### 附加固化型 (KCT-7771)

1. 以適當比例甲苯等溶劑稀釋後，添加架橋劑 X-92-122C 攪拌均勻。
2. 再添加白金觸媒 CAT-PL-50T 攪拌均勻。
3. 塗佈於基材上，在 100~130°C 溫度下加熱 1~3 分鐘使其固化。

##### BPO Cure Type

1. Dilute with toluene, then add peroxide catalyst and distribute well.
2. Coat on the backing film, remove the solvent at 70~90°C air dry and cure for 2~5 minutes at 160~200°C.

##### Addition Cure Type (KCT-7720)

1. Dilute with toluene, then add platinum catalyst CAT-PL-50T and distribute well.
2. Coat on the backing film and cure for 1~3 minutes at 100~130°C.

##### Addition Cure Type (KCT-7771)

1. Dilute with toluene, add cross-linker X-92-122C and distribute well.
2. Add platinum catalyst CAT-PL-50T and distribute well.
3. Coat on the backing film and cure for 1~3 minutes at 100~130°C.

### 保護膜用免底塗微黏著二液型感壓膠：KET-166A/B

#### Primer-Free 2-Component Type Low Adhesion Adhesive for Protective Film：KET-166A/B

產品名 Product	外觀 Appearance	固成分 Non Volatile Content %	黏度 Viscosity 25°C Pa·s	溶劑 Solvent	室溫黏著力 Room Temperature Adhesion g/inch
KET-166-A	Transparent	60	30	Toluene	2
KET-166-B	Transparent	60	30	Toluene	

標準配方 / Standard formulation  
 KET-166A/KET-166B = 100/100  
 Backing: PET film 25 μm  
 Adhesive thickness: 40 μm  
 Curing condition: 150°C/1min  
 Substrate: SUS304

(非規格值 not specified values)

##### 特色

1. 保護膜用
2. 不需要底膠塗佈
3. 超低黏著力
4. 與被著體濕潤性良好
5. 可重工

##### Features

1. For protective film
2. Primer-free
3. Very low adhesion
4. Good wetting property to adhesive object
5. Reworkability

##### 使用方法

1. 將 KET-166A 與 KET-166B 劑以相同份量混合後攪拌均勻。
2. 將塗佈液塗佈在基材上後，以 120~150°C 溫度下加熱 1~10 分鐘。

##### Usage

1. Blend KET-166A (100 parts) with KET-166B (100 parts) and distribute well.
2. Coat on the backing film and cure for 1~10 minutes at 120~150°C.

### 過氧化物型感壓膠用底膠：KR-3006A/BT

#### Primer for BPO Type PSA：KR-3006A/BT

產品名 Product	用途 Application	固化方式 Cure System	固成分 Non Volatile Content %	黏度 Viscosity 25°C mm <sup>2</sup> /s	溶劑 Solvent	觸媒 Catalyst	密著助劑 Additive
KR-3006A	過氧化物型感壓膠用底膠 Primer for BPO cure type PSA	縮合型 Condensation	10	150	Toluene	CAT-PS-8S	KR-3006BT
PRIMER-NO8A/B	附加型感壓膠用底膠 Primer for Addition type PSA	附加型 Addition	50	550	Toluene	—	—

標準配方 / Standard formulation

KR-3006A/KR-3006BT/CAT-PS-8S = 100/1/0.5

PRIMER-NO8A/PRIMER-NO8B/n-Hexane = 100/100/300

(非規格值 not specified values)

##### KR-3006A 使用方法

1. 對 KR-3006A(100 parts)添加 KR-3006BT(1 parts)混合後，絞拌均勻。
2. 使用有機溶劑(甲苯、正庚烷、正己烷)稀釋至便於塗佈的黏度。
3. 添加觸媒 CAT-PS-8S(0.5 parts)後，再攪拌均勻。
4. 將塗佈液塗佈在基材上後，以 100~130°C 溫度下加熱 1~3 分鐘，使乾量達到 0.1~1.0g/m<sup>2</sup>。
5. 然後塗佈感壓膠。

##### Usage of KR-3006A

1. Blend KR-3006A (100 parts) with KR-3006BT (1 parts), and distribute well.
2. Dilute with solvent (toluene, n-heptane, n-hexane) to suitable viscosity.
3. Add CAT-PS-8S (0.5 parts) and distribute well.
4. Coat on the backing film and cure for 1~3 minutes at 100~130°C. Primer thickness is 0.1~1.0 g/m<sup>2</sup>.
5. Then coat the PSA.

##### PRIMER-NO8A/B 使用方法

1. 將 PRIMER-NO8A 及 PRIMER-NO8B 等比例混合攪拌均勻。
2. 再加入適當比例之 n-Hexane 攪拌均勻。
3. 將塗佈液塗佈在基材上後，以 100°C 溫度下加熱 60 秒。
4. 然後塗佈感壓膠。

##### Usage of PRIMER-NO8A/B

1. Blend PRIMER-NO8A (100 parts) with PRIMER-NO8B (100 parts) and distribute well.
2. Add n-Hexane (300 parts) and distribute well.
3. Coat it on the backing film and cure for 60 seconds at 100°C.
4. Then coat the PSA.

### 附加型感壓膠用底膠：PRIMER-NO8A/B

#### Primer for Addition Type PSA：PRIMER-NO8A/B

### 有機硅感壓膠應用範例

#### Applications of Silicone PSA

- 耐熱膠帶
- 遮蔽膠帶（耐熱、焊錫、電鍍、塗裝）
- 保護膜
- 有機硅、聚烯烴、氟素橡膠用黏著膠帶
- 有機硅橡膠固定用膠帶
- 電氣絕緣膠帶
- 耐火電線纏繞用膠帶（雲母膠帶）
- High temperature tape
- Masking film for heat resistance, IR reflow, electroplating and painting
- Protective film
- Tape for adhesion to silicones, polyolefines and fluoropolymers
- Tape for adhesion to silicone rubbers
- Electrical insulating tape
- Mica tape

### 儲存和使用注意事項

- 錫、氮、磷、硫等化合物會引發觸媒毒阻礙附加型感壓膠的固化，請避免這些物質的混入。
- 請避免高溫、陽光直射，密閉的情況下置於室溫陰暗處保存。

### 安全衛生上的注意事項

- 感壓膠產品及其使用的架橋劑、觸媒多含有易燃性的有機溶劑，因此請注意火源。聯合國在分類上將這些含有有機溶劑的產品列為易燃液體，在運輸、保管等方面，請依法處理。
- 吸入有機溶劑可能會引起中毒，請在通風的環境下使用。若在通風不足的環境下請配戴有機氣體用防毒面具操作。
- 操作時請佩戴防護手套及護目鏡，請注意勿沾到皮膚、黏膜。不慎沾到時請立即用肥皂水、中性洗劑、清水充分洗淨。若不慎沾到眼睛時請立即用流水清洗 15 分鐘以上並接受醫生的檢查。
- 請將本產品置於幼兒無法觸及處。
- 使用前請參閱物質安全資料表(MSDS)。物質安全資料表(MSDS)請向信越矽利光營業人員索取。

### 包裝 Packaging

產品名 Product	用途 Purpose	1KG	15KG	18KG	180KG	190KG
KRT-001	PSA	○		○		○
KRT-003	PSA	○		○		○
KRT-025	PSA	○		○		○
KRT-002	PSA	○		○		○
KRT-006	PSA	○	○		○	
KRT-009	PSA	○		○		○
KRT-026	PSA	○		○		○
KCT-7771	PSA	○		○		○
KCT-7720	PSA	○	○		○	
KET-166-A	PSA	○	○			
KET-166-B	PSA	○	○			
KR-3006A	Primer	○	○			
PRIMER-NO8A	Primer	○	○			
PRIMER-NO8B	Primer	○	○			
CAT-PS-8S	Catalyst	○				

※KR-3006BT (additive) : 20g  
CAT-PL-50T (catalyst) : 180g

### Storage and Handling

- Addition cure type PSA may not cure properly if it come in contact with certain substances, including amines, sulfur, organophosphorus compounds and organotin compounds. Please avoid the upper substances when handling.
- Keep away from high-temperature location, seal tightly and store in a cool, dark place (25°C or below, out of direct sunlight).

### Precaution

- Pressure sensitive adhesion, cross-linker and catalyst products contain organic solvents. Keep away from heat and open flame.
- These products should be handled with adequate ventilation to avoid inhalation with their vapors. Please wear gas mask if necessary.
- To avoid contact with skin or membranes, wear rubber gloves, goggles, and other protective gear. If contact occurs, flush the affected area immediately with large amounts of water. If eye contact occurs flush the eyes immediately with large amounts of water at least 15 minutes and consult a doctor as soon as possible.
- Keep out of reach of children.
- Please contact our sales department for the Material Safety Data Sheet and read it carefully before using any of these products.

※注意：X-92-122C 不能與 CAT-PL-50T 單獨混合，會發熱並產生氫氣，有可能會引起溶劑著火造成火災。  
※Caution : X-92-122C can not be blended with CAT-PL-50T only. It would cause heat release and produce hydrogen. It is possible to make diluent burn and cause a fire accident.

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29~31 March, 2010 APFE in Shanghai, China