



台湾塑膠工業股份有限公司  
FORMOSA PLASTICS CORPORATION

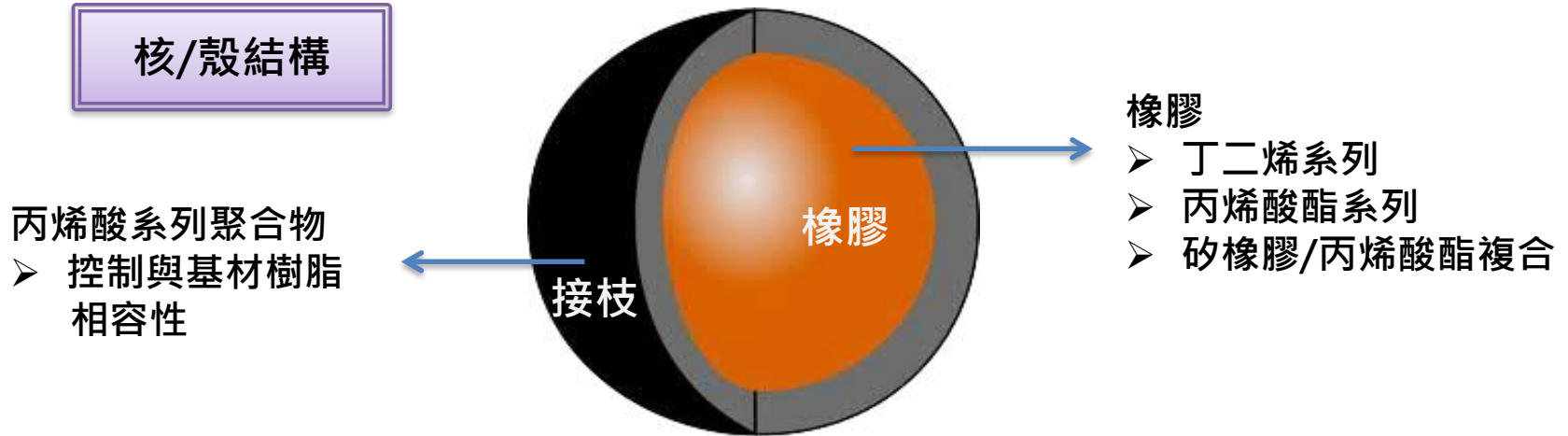
FORMOLON  
耐衝改質劑  
加工助劑

IMPACT MODIFIER & PROCESSING AID



# 改質劑構造 Impact modifier Structure

FORMOLON



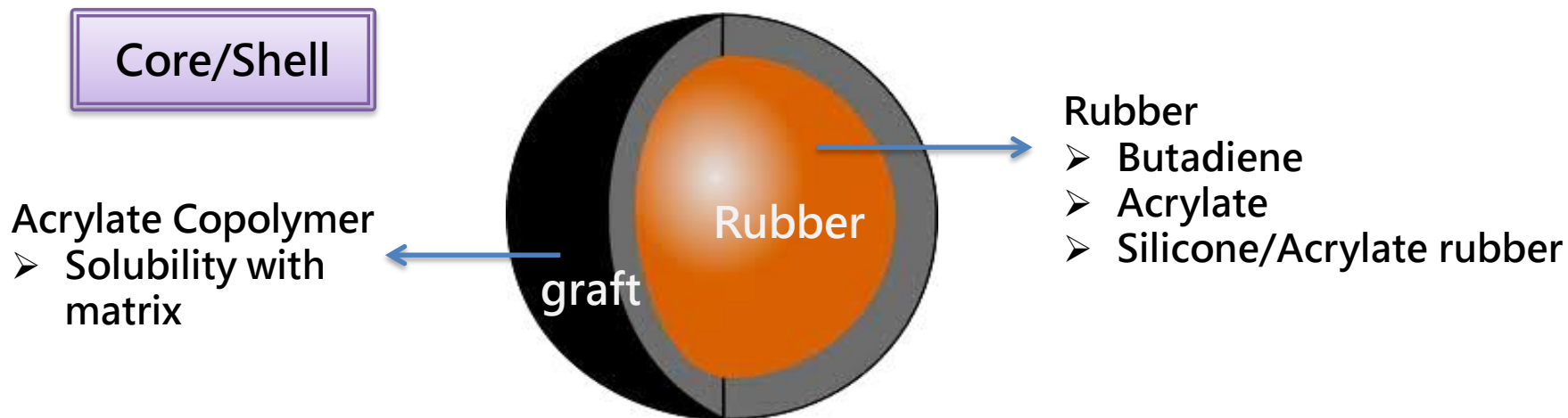
型號	橡膠	橡膠彈性		耐候性
		常溫	低溫	
M系列	丁二烯系列	○	○	×
A系列	丙烯酸酯系列	○	△	○
K系列	矽橡膠/丙烯酸酯複合	○	⊙	⊙

優劣：⊙ > ○ > △ > ×



# 改質劑構造 Impact modifier Structure

FORMOLON



	Rubber	Rubber property		Weather resistance
		R.T.	L.T.	
M-type	Butadiene	○	○	×
A-type	Acrylate	○	△	○
K-type	Silicone/Acrylate	○	⊙	⊙

Excellent → Bad : ⊙ > ○ > △ > ×



**台湾塑膠工業股份有限公司**  
**FORMOSA PLASTICS CORPORATION**

FORMOLON

**MBS**

**PVC耐衝擊改質劑**  
**IMPACT MODIFIER FOR PVC**



# 簡介

## Introduction

FORMOLON MBS

對硬質PVC產品來說，衝擊強度是一項相當重要之特性。藉由耐衝擊改質劑MBS的使用可顯著的改善硬質PVC的耐衝擊性，同時又不會對其它應用性能造成太大的影響。

MBS is mainly used for blending with PVC to improve the impact strength of PVC at room or low temperature, thereby enhancing the performance of processed PVC products.

以下為台塑耐衝擊改質劑MBS在硬質或半硬質PVC加工上所具有之特性及功能：

For rigid and semi-rigid PVC products, following characteristics are obviously found if PVC is blended with FPC Formolon MBS:

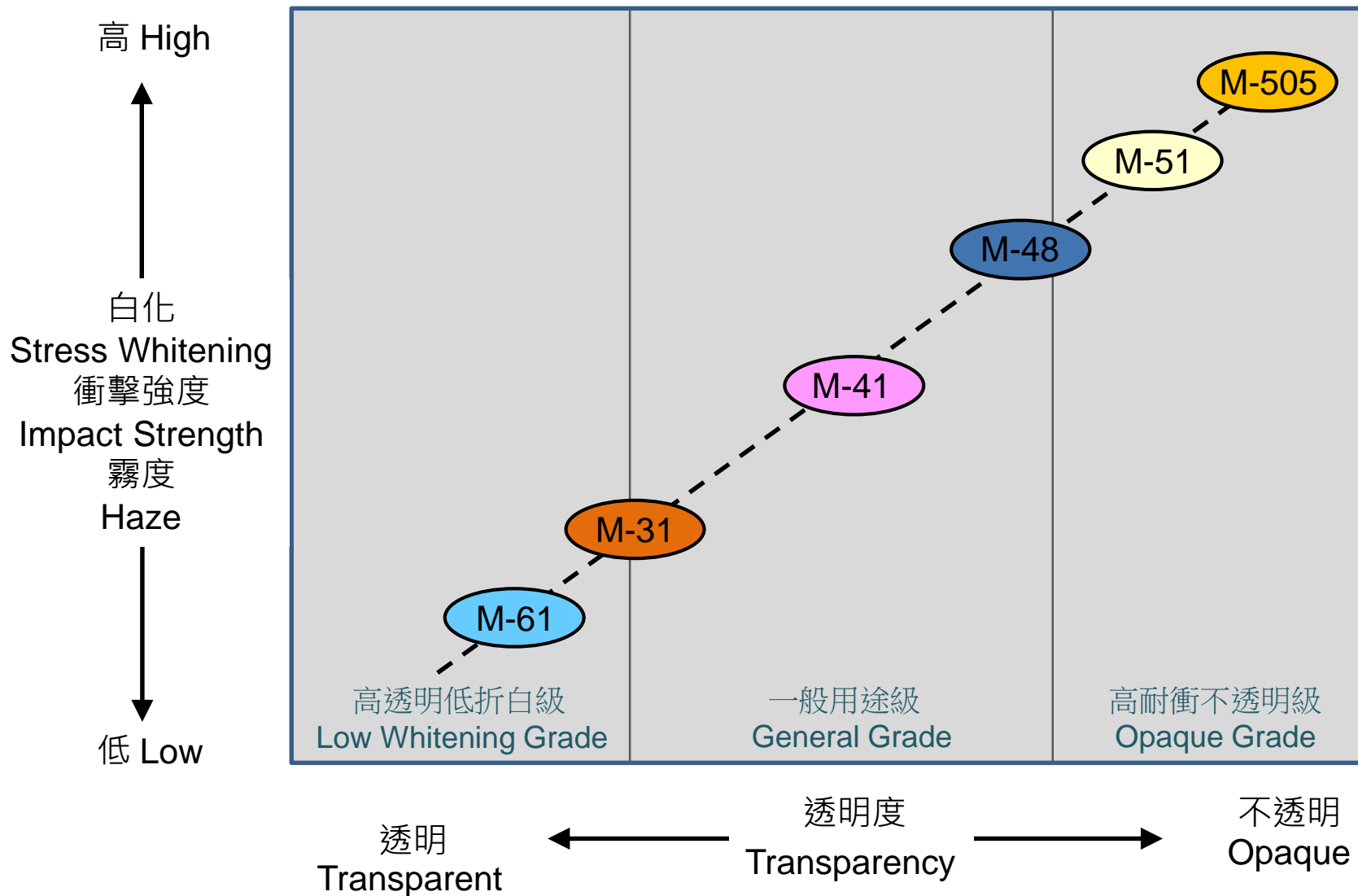
- 具超強衝擊強度改質效果  
Super impact strength
- 產品表面特別平滑  
Extra smooth surface
- 使用在膠布機、押出機及射出成型等易於加工  
Efficient dispersion and processibility for calender, extruder, injection molding and blowing etc.
- 折白性極微  
Little stress-whitening
- 無特殊氣味  
Little or no influence on odor
- 具良好熱安定性  
Excellent heat stability
- 與PVC及添加物易於混合  
Easy for blending with PVC and other additives



# FORMOLON MBS的分類

## Classification of FORMOLON MBS

FORMOLON MBS





# 產品主要性能及應用 General Properties & Application

FORMOLON MBS

特性 item 品別 Grade	耐衝擊強度 Impact Strength	透明性 Transparence	抗折白 Stress Whitening	主要用途 Application					特點 Property
				薄膜 film	片材 sheet	板材 plate	粒料 pellet	異型管 mold pipe	
M-61	●●○	●●●●	●●●●	√	√	√			透明、抗折白最佳 Low Whiteness
M-31	●●●	●●●○	●●●○	√	√	√			綜合性能優 General Purpose
M-41	●●●●	●●●	●●●	√	√	√	√		低溫強度優良 High Performance
M-48	●●●●◎	●●●	●●●	√	√	√	√	√	低溫強度優良 High Performance
M-51	●●●●●	●	●	√	√	√	√	√	不透明高強度 Opaque,High Impact
M-505	●●●●●●	●	●	√	√	√	√	√	不透明高強度 Opaque,High Impact

Note: ● > ◎ > ○



# 物理性質 Physical Properties

FORMOLON MBS

品別 Grade	M-61	M-31	M-41	M-48	M-51	M-505
項目 Item						
外觀 appearance	白色 white	白色 white	白色 white	白色 white	白色 white	白色 white
假比重 g/cm <sup>3</sup> bulk density	0.3以上 0.3 min	0.3以上 0.3 min	0.3以上 0.3 min	0.3以上 0.3 min	0.3以上 0.3 min	0.3以上 0.3 min
揮發份% volatile matter	1.0以下 1.0 max	1.0以下 1.0 max	1.0以下 1.0 max	1.0以下 1.0 max	1.0以下 1.0 max	1.0以下 1.0 max
熱安定性 heat stability	●●●	●●●	●●○	●●○	●●	●●
抗張強度 Kg/cm <sup>2</sup> tensile strength	541	539	570	585	590	597
拉伸率% elongation at break	335	338	379	385	358	380
針入度℃ vicat temp	85.7	86.1	85.2	85.5	85.6	85.3
硬度(shore D) hardness	76-78	76-79	75-78	75-78	76-78	75-78
特性 characteristics	超透低霧度 excellent transparency and little haze 耐應力白化 low stress whitening 低氣味 odorless 符合PL認證 PL approval	膠化性佳 enhance fusion 透明性優 Excellent transparency 耐白化 low whitening 符合PL認證 PL approval	耐衝擊優 good impact strength 透明性佳 good transparency 耐油級 oil resistance 符合PL認證 PL approval	耐衝擊優 excellent impact strength 透明性佳 good transparency 低氣味 odorless 符合PL認證 PL approval	耐衝擊優 excellent impact strength 熔融強度優 good melting strength 球型化粒子 Uniform particle size 符合PL認證 PL approval	低溫耐衝優 excellent impact strength 熔融強度優 good melting strength 膠化性佳 good fusion behavior 符合PL認證 PL approval





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**FORMOSA PLASTICS CORPORATION**

FORMOLON

PA

**PVC加工助劑**  
**PROCESSING AID FOR PVC**



## 加工助劑的性質 ( Properties of Processing aid )

- 為丙烯酸酯類聚合物  
(Acrylic copolymer.)
- 與PVC相容性極佳  
(Excellent compatibility with PVC.)
- 為長鏈、柔軟高分子聚合物  
(Long-chain & flexible copolymers.)
- 具高分子量特性  
(High molecular weight.)




## 加工助劑的功能 ( Functions of Processing aid )

- 促進膠化  
( Speed up the gelation times. )
- 增加熔體強度、延展性和彈性  
( Improve hot melt strength, extension and elasticity. )
- 預防熔體Draw Down產生  
( No Draw down occur. )
- 穩定PVC加工尺寸安定性  
( Close dimensional conformance. )
- 提高製品光澤度、減少氣斑形成，獲得良好的外觀  
( Improve appearance of PVC foam ,reduce presence of air-mark. )
- 改善發泡製品表面品質，減少閉泡的破裂  
( Surface of foam product is smooth, reduce gas bubbles collapsed. )
- 具潤滑作用，防止熔融的塑料黏在金屬表面  
( Metal release and lubricant, outstanding anti-sticking efficiency. )



# 類型與應用 ( Type and application )

FORMOLON PA

	分子量 Molecular weight	類型 Type	Matrix Resin			應用 Application
			ABS	PVC	CPVC	
P-101	低 <b>Low</b>  高 <b>High</b>	滑劑型 Lubrication type	○	○		· 高分子外部滑劑 Exterior lubricant
P-1000		高效率滑劑型 Ultra High efficiency Lubrication type	○	○	○	
P-201		一般膠化型 General type				· 硬質、半硬質輥輪 for rigid,semi-rigid calender · 押出 extruding · 吹瓶 blow-molding · 射出 injection-molding · 二次加工 second-processing
P-220		一般膠化型 General type (減少析出 reduce plate out)		○		
P-251		快速膠化型 Fast gelation type		○	○	
P-301		高效率分散型 High efficiency dispersion type		○	○	· 硬質、半硬質輥輪 for rigid,semi-rigid calender · 押出 extruding · 吹瓶 blow-molding · 射出 injection-molding
P-302		超高效率分散型 Ultra High efficiency dispersion type		○	○	
P-701		超高分子量型 Ultra High molecular weight type			○	· 二次加工 second-processing · 發泡 foam-molding



**台灣塑膠工業股份有限公司**  
**FORMOSA PLASTICS CORPORATION**

**FORMOLON**

**A-607**

**丙烯酸系耐衝擊改質劑**  
**ACRYLATE IMPACT MODIFIER**



# 簡介

## Introduction

FORMOLON A-607

A-607耐候耐衝擊改質劑具有優異的耐候性與耐衝擊性，改善加工性，製品包含硬質與半硬質PVC產品，可做為室內、外建材、壁材、傢俱、窗框等，不僅可幫助產品增加耐衝擊性之外，更可提升耐候性，使在嚴酷的環境下，仍保持優異的物性與外觀。以下為台塑耐候耐衝擊改質劑A-607在加工上所具有之特性及功能

A-607 have excellent weatherability and impact strength. It make your manufacturing easier. And it gives exterior PVC products like pipe and fittings, electrical conduit, house siding, windows frames and trim etc., the durability and impact resistance they need. To protect your products from harsh outdoor condition (radiant sunlight, high heat, humidity, the atmosphere itself) is a vital necessity for processed rigid PVC products. It makes your products keep good properties and appearance even in the harsh environment. Adding just a little A-607 modifier can give

- 具有優異的耐候性  
Excellent weatherability
- 具有光滑的外觀  
Glossy appearance
- 耐衝擊佳，添加少量A-607就可得到極佳的耐衝擊強度  
Excellent impact strength
- 增加熔融流動性，適合射出成型  
Increases melt flow in injection molding
- 具良好熱安定性  
Excellent thermal stability
- 與PVC及添加物易於混合加工  
Easy for blending with PVC and other additives, and increased output



# 產品規格

## Specifications of product

FORMOLON A-607

特性 Parameter	參考值 Typical Value	單位 Unit	測試方法 Test Method
假比重 Bulk Density	$\geq 0.40$	$\text{g/cm}^3$	JIS K6720-2
揮發份 Volatile Matter	$\leq 1.0$	%	JIS K6720-2
紅黑渣 Foreign Particles	$\leq 30$	PC/100g	FPC Method
粉徑大於16目比例 Particle Size on 16 mesh sieve	$\leq 1.0$	%	FPC Method
IZOD缺口強度(25°C) Notched IZOD Impact (25°C) 添加量(Dosage): 6 份(PHR) 添加量(Dosage): 8 份(PHR)	$\geq 15$ $\geq 100$	$\text{KJ/M}^2$	ASTM D-256
IZOD缺口強度(0°C) Notched IZOD Impact (0°C) 添加量(Dosage): 6 份(PHR) 添加量(Dosage): 8 份(PHR)	$\geq 8$ $\geq 10$	$\text{KJ/M}^2$	ASTM D-256



台湾塑膠工業股份有限公司  
FORMOSA PLASTICS CORPORATION

FORMOLON

K-210

硅系耐衝擊改質劑  
SILICONE IMPACT MODIFIER





### PRODUCT PROPERTIES

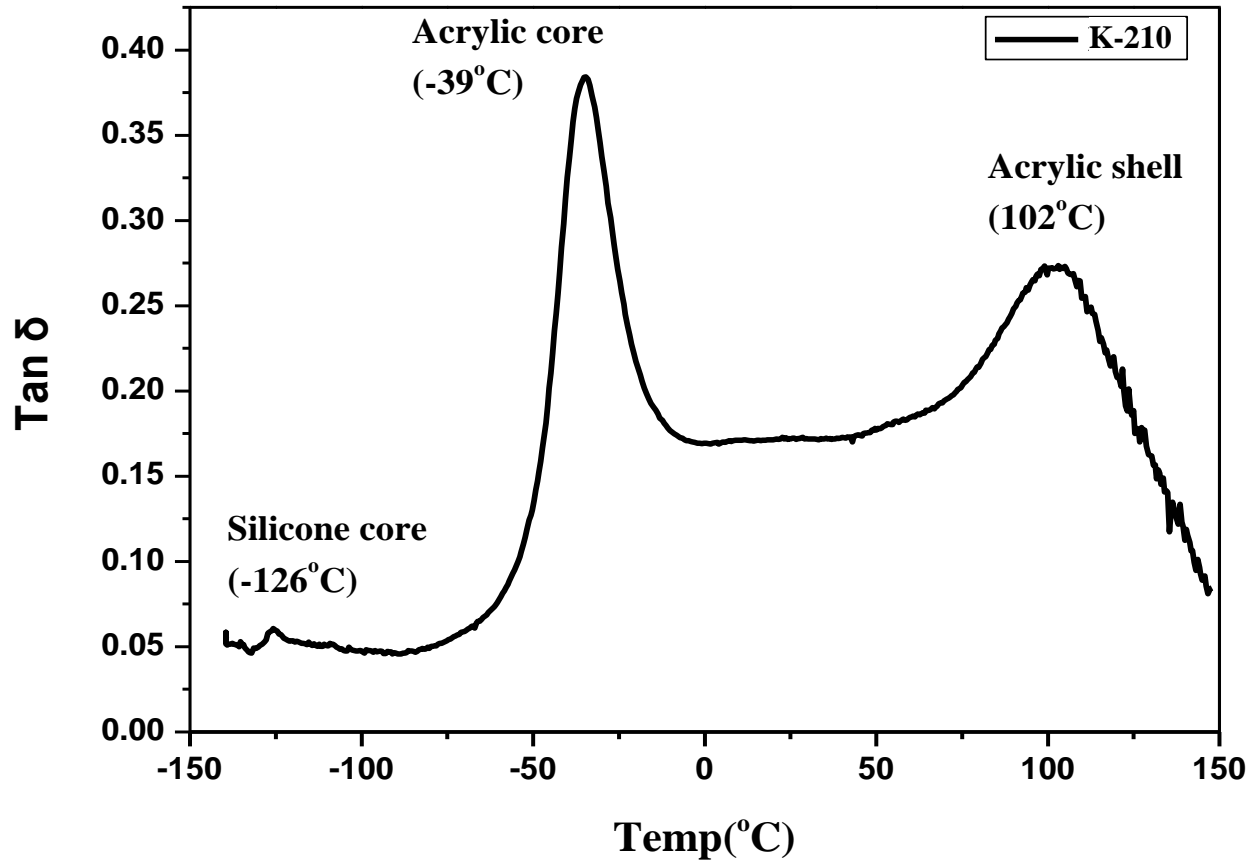
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- FORMOLON K-210是樹脂耐衝擊改質劑。  
FORMOLON K-210 is impact modifier.
  
- K-210從通用樹脂到工程樹脂，各種熱塑性樹脂為添加對象，依據在樹脂當中充分分散原理，提高衝擊強度、改善表面外觀、優良耐候性、提高加工性能、生產效率等等。  
K-210 is used for General Plastics and Engineering Plastics. According to well dispersion in resin, it can improve the impact strength , surface appearance , get excellent weather resistance , good processing performance, high productivity , etc.
  
- 使用樹脂(RESIN)
  - 工程塑膠(Engineering Plastics)：PC、PC/ABS等
  - 通用塑膠(General Plastics)：PVC



# DMA 圖譜 DMA CHART

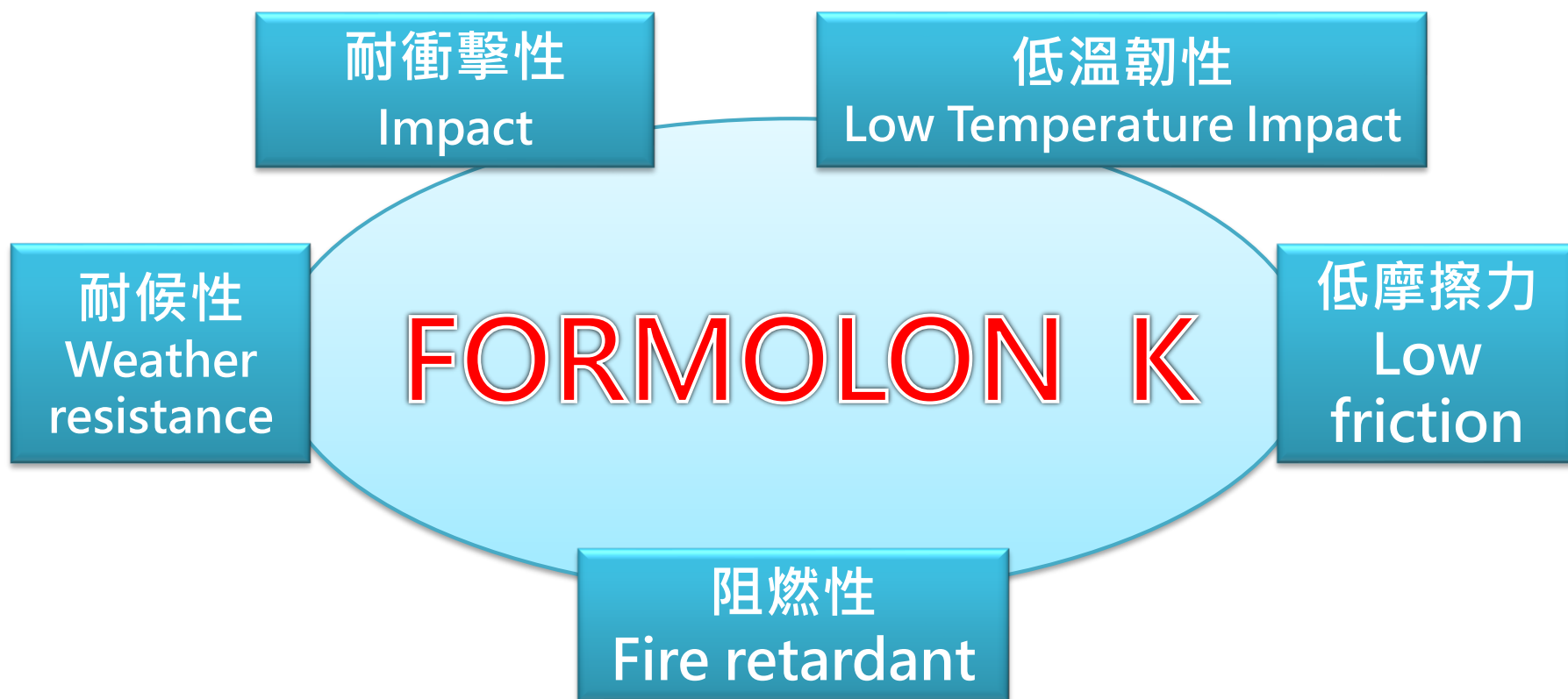
FORMOLON K-210





# 改質效果 IMPACT MODIFIER EFFECT

FORMOLON K-210





# 產品規格

## IMPACT MODIFIER EFFECT

FORMOLON K-210

特性 Parameter	參考值 Typical Value	單位 Unit	測試方法 Test Method
假比重 Bulk Density	$\geq 0.36$	$\text{g/cm}^3$	JIS K6720-2
揮發份 Volatile Matter	$\leq 1.0$	%	JIS K6720-2
紅黑渣 Foreign Particles	$\leq 30$	PC/100g	FPC Method
粉徑大於16目比例 Particle Size on 16 mesh sieve	$\leq 1.0$	%	FPC Method



台灣塑膠工業股份有限公司  
FORMOSA PLASTICS CORPORATION

FORMOLON

耐衝改質劑、加工助劑  
產品應用

IMPACT MODIFIER & PROCESSING AID  
Product Applications



# 產品應用(MBS、PA、A-607) Product Applications ( MBS、PA、A-607 )

FORMOLON

## 1. 膠膜膠布 Calender Film/Sheet



## 3. 裝飾品 Decorations



## 2. 真空吸塑 Vacuum Forming





# 產品應用(MBS、PA、A-607)

## Product Applications ( MBS、PA、A-607 )

FORMOLON

### 4.異型押出 Profile Extrusion



### 5.管件 Pipe Fittings







# 產品應用 ( K-210 ) Product Applications ( K-210 )

FORMOLON K-210



- 使用樹脂：PC、PC/ABS等
- 筆記型電腦外殼、家用電器外殼、數位相機外殼、事務機器外殼、螢幕外殼、消費性電子外殼
- Laptop case、Household appliances shell、Digital camera case、Business machines shell、Screen housing、Consumer electronics housing





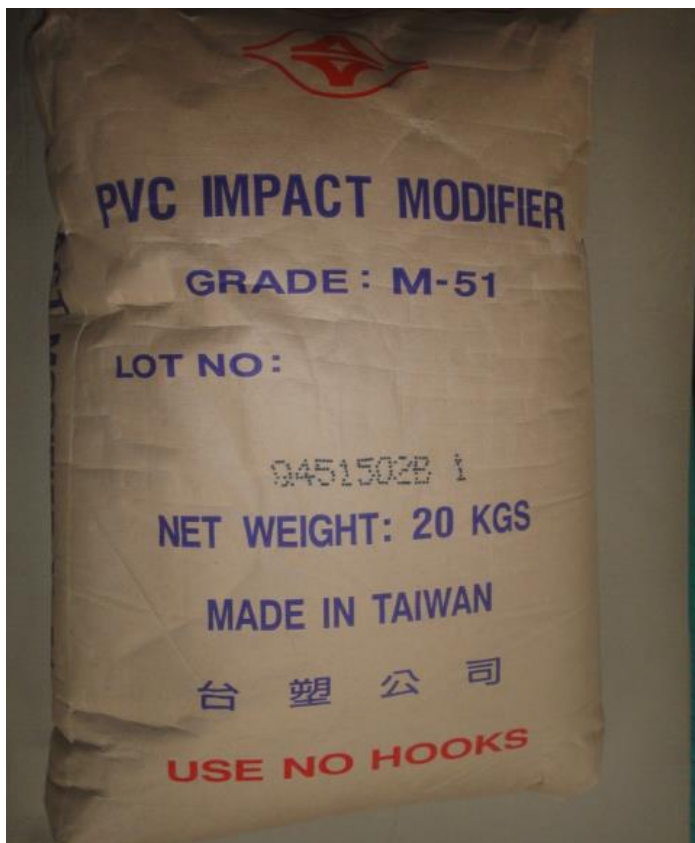
# MBS包裝方式

## MBS PACKAGES

FORMOLON

20公斤裝紙袋  
20KG PAPER BAG

400KG PP編織太空包  
400KG PP WOVEN JUMBO BAG





# PA包裝方式 PA PACKAGES

FORMOLON

25公斤裝紙袋  
25KG PAPER BAG



500KG PP編織太空包  
500KG PP WOVEN JUMBO BAG





# 裝櫃數量 LOADING QUANTITY

FORMOLON

## ● 裝櫃數量 LOADING QUANTITY

包裝別 PACKAGE		貨櫃 CONTAINER	
		20呎 20FEET	40呎 40FEET
MBS	20KG PAPER BAG	11MT	22MT
	400KG JUMBO BAG	8MT	17.6MT
PA	25KG PAPER BAG	12MT	22.5MT
	500KG JUMBO BAG	10MT	20MT
A-607	20KG PAPER BAG	11MT	22MT
K-210	20KG PAPER BAG	11MT	22MT