

## K86135 PPF – Aliphatic Polyurethane

### Product Description

This premium quality extruded aliphatic polyurethane film has been specially developed as Paint Protection Film (PPF) to reduce corrosion, stone chipping and scratching.

The film is transparent and has a specially developed High Tack adhesive system which makes it suitable for use over painted surfaces.

Following an extensive development program KPMF are pleased to introduce an advanced flexible clear coating on the top surface of this polyurethane paint protection film. The flexible clear coating offers an outstanding and trouble-free application process, together with the outstanding gloss and enhanced exterior durability.

The film protects painted surfaces of the vehicle from minor scuffs, scratches, damage caused by stone chips and environmental elements. Suitable for use on specific exposed areas including car bonnets, bumpers, or for full vehicle coverage.

Due to the nature of the clear coat, it is unlikely that any printing inks will adhere to the surface.

This product is supplied with a PET carrier; the PET carrier protects the surface whilst the product is in roll form in order to provide the highest gloss level prior to installation.

### Recommended Uses

- Protection against stone chips, scratches and environmental damage
- Full vehicle coverage
- Exposed areas such as car bonnets and bumpers

### Products Available

- K86135 clear coated 137µm polyurethane

### Face Film

137µm Aliphatic Polyurethane with Flexible Clear Coat

### Adhesive

30g/m<sup>2</sup> permanent solvent-based acrylic

### Release Liner

75µm matt polyester

### Widths

1245mm , 1524mm

### Durability

Up to 10 years outdoors  
(vertical exposure, mid-Europe)

### Shelf Life

2 years  
(out of direct sunlight, between 15°C and 23°C, 30% to 70% relative humidity)  
*Where the film is supplied without either protective film attached, the shelf life under the same conditions above is reduced to three months*

### Physical Characteristics

	Test Method	Typical Value
Film Thickness	ISO 4591:1992	137µm polyurethane with 15µm top coat
Elongation	ISO 527-3:2018	270%
Dimensional Stability (48 hours/70°)	FTM14/Aluminium	<1.0mm
Gloss 60°	ASTM D523-14 (2018)	>90
20 minute 180° Peel	FTM1/Stainless Steel	>400 N/m
72 hour 180° Peel	FTM1/Stainless Steel	>900 N/m
Ease of release	T-Peel	21 N/m

Flammability		Self-extinguishing
Artificial Weathering	Xenon Arc	2000 hours
	Florida/Arizona	2 years
	Emmaqua	1 year

### Outdoor weathering

#### Zone 1

<u>Vertical</u>	<u>Horizontal</u>
7 Years	3 Years

### Temperature Range

Application Temperature	Minimum +10°C
Service Temperature	-40°C to +90°C

### Resistance to various liquids and conditions

Fuel		No blistering, visible shrinkage or edge lifting
Resistance to soap and water spotting	FLTM BI 113-01	No blistering, permanent stain, change of colour or gloss
Acid	FLTM BI 113-02	No blistering, permanent stain, change of colour or gloss
Water	240 hours, FLTM BI 104-01	No blistering, permanent stain, change of colour or gloss
Environmental	10 cycles consisting of: 4 hours at 70°C, 4 hours at 38°C and 95-100% RH, 16 hours at -30°C	Shows no evidence of cracking, blistering, lifting, or colour change in excess of 3.5 Delta E on a CMC 2:1 colorimeter scale compared with an exposed white painted panel and no gloss change greater than 15%
Abrasion	1000 cycles, 500g load, CS-17 wheel	No blistering, visible shrinkage or edge lifting
Gravel	SAE J400 2.4l of gravel: 48 hours at 23°C 48 hours at 23°C & 4 hours at -30°C 4 hours at -30°C two cycles GM950SP-F	Does not exceed approved sample Does not exceed approved sample Does not exceed approved sample
<b>Type of TPU to Shore D</b>		Clear coat measures 85 Shore D

## Product Usage Guide

This premium quality extruded aliphatic polyurethane film has been specially developed as a Paint Protection Film (PPF) to reduce corrosion, stone chipping and scratching.

The film protects painted surfaces of the vehicle from minor scuffs, scratches, damage caused by stone chips and environmental elements. Suitable for use on specific exposed areas including car bonnets, bumpers, or for full vehicle coverage.

Produced with an advanced flexible clear coating on the top surface that offers an outstanding and trouble-free application process, together with the outstanding gloss and enhanced exterior durability. KPMF films should not be applied to unsound surfaces or to surfaces which may subsequently crack, peel, outgas or are of low surface energy. It is recommended that any application surface should have an energy level in excess of 40 dyne/cm. (Polyolefins should be in excess of 45 dyne/cm).

Prolonged exposure to high and low temperatures in the presence of chemicals such as solvents, acids etc. may eventually cause deterioration. Actual performance will depend on substrate preparation, exposure conditions and application of marking.

Although we have good control of the production of KPMF products at our multiple locations, as with all other manufacturer's products, customers should be aware that there may be subtle variances between samples, swatches and production materials, so it is advisable to avoid using different batches of material for the same end application.

Application temperature onto clean, dry surface min +10°C

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#### **Product Warranty**

*Kay Premium Marking Films are produced under stringent manufacturing conditions. The information and typical values shown are based upon research believed to be reliable and are provided without guarantee and do not constitute a warranty. The values are not for use in specifications. Ink and paint systems can affect the performance of film and also the adhesive properties, as can application techniques. Users are advised to ensure that performance and reliability are not compromised by determining the suitability of each product prior to its intended use.*

*Kay Premium Marking Films are produced under careful quality control and are warranted to be fit for the purpose and free from defect in material and workmanship. Any material shown to be defective to our satisfaction at the point of sale shall be replaced free of charge. Kay Premium Marking Films Limited liability to the purchaser shall in no circumstances exceed the cost of the amount of the defective material supplied. Due to the large variety of available paint finishes, it is advisable to fully evaluate small areas particularly after printing prior to complete applications.*

*The data included on the Data sheet shows typical properties and should not be taken as a guarantee for performance.*