# MACal 9200 PRO™

## PRODUCT DESCRIPTION

MACal 9200 PRO™ Serie consists of blended polymeric stabilized calendered soft vinyl films designed for trouble-free computer cutting and fast weeding, even for small letters and fine lines.

The series includes 65 different glossy or matt colors available in permanent (MACal 9200 PRO P) and in removable (MACal 9200 PRO R). It is completed with high tack and bubble free versions.

**Face Material:** Calendered blended polymeric vinyl film, 70µm thick, cadmium-free.

**Adhesive:** Solvent acrylic adhesive

Available in permanent (P), removable (R), High tack (HT) and Bubble free (BF) versions

**Liner:**

- P / R / HT: Highly stable 135 gsm white kraft paper with grey Mactac backprinting. For white vinyls, the liner is coated with a blue silicone coating to improve the contrast with the film colour.

- BF: Highly stable 145 gsm white kraft paper with grey Mactac backprinting.

NB : CONTRAST ensures a clear view during the stripping process therefore improving productivity.

## TYPICAL USE

MACal 9200 PRO™ is a medium term marking film designed for indoor (exhibition, stands) or outdoor applications (Vehicle marking, window graphics, signs, ...).

MACal 9200 PRO R: Application is possible at temperatures down to 0°C.

MACal 9200 PRO HT: This adhesive provides excellent adhesion on low energy and difficult substrates such as non- smooth or slightly porous surfaces like painted walls, MDF, industrial equipment, waste containers, etc.

MACal 9200 PRO BF: Structured adhesive that allows faster application onto substrates (dry application ONLY).

## PROCESSING

### Computer cutting

Clean, quick, trouble-free cutting with most plotters. Adjustment of the cutting depth is important: if the cut is too deep this could result in the paper splitting and coming away with the adhesive when the vinyl is transferred to Application Tape.

### Application

The transfer of the cut vinyl onto the Application Tape should always be performed by removing the liner from the pressure-sensitive material and not by lifting off the Application Tape.

All surfaces to which the material will be applied must be thoroughly cleaned from dust, grease or any contamination.

Note also that the wet application method is not allowed for bubble free versions.

Further details on the processing are outline in the following technical bulletin: “Technical Bulletin 5.0: Marking films - Application guide”

### Important remark

Some adverse reactions can occur when applying MACal 9200 PRO™ to certain substrates, for example: acrylics, polycarbonate, polystyrene, plasticized PVC, certain paints and lacquers. These reactions could take the form of cracks, swelling, ghosting and variance in adhesion performance. Therefore, as with any critical application, it is recommended to carry out suitability tests.

## SHELF LIFE

2 years when stored at 15 to 25°C and ± 50 % relative humidity (in the original packaging).

## PHYSICAL PROPERTIES (TYPICAL VALUES)

| **Thickness (µm) ISO 534** | | | | |
|---|---|---|---|---|
| | **P** | **R** | **HT** | **BF** |
| Film + Adhesive | 95 | 90 | 95 | 115 |

| **Face Material data, 23°C - DIN ISO 527-3** | |
|---|---|
| Tensile Strength (N/15mm) | >25 |
| Elongation at Break (%) | >150 |

| **Adhesive data, 23°C (N/25 mm)** Peel adhesion 180° on mirror stainless steel - FTM 1 | | | | |
|---|---|---|---|---|
| | **P** | **R** | **HT** | **BF** |
| - 20 min. residence | 14 | 4 | | 11 |
| - 24 hour residence | 18 | 5.5 | | 14 |
| - 1 week residence | 19 | 7.5 | | 14 |
| Peel adhesion 180° on HDPE | | | | |
| - 20 min. residence | | | 11 | |
| - 24 hour residence | | | 14 | |

*Contact*
*Email: mactac.europe@mactac.eu*
*Website: www.mactacgraphics.eu*

| | | | | |
|---|---|---|---|---|
| - 1 week residence | | | 15 | |

| | | |
|---|---|---|
| **Dimensional stability** | | |
| Shrinkage (1 week at 70°C applied on Aluminium) | P, HT, BF: Max. 0.3 mm<br>R: Max 0.2 mm | FTM 14 |
| **Temperature ranges** | | |
| Application (°C) | +8°C (P, HT, BF) - +0°C (R) | |
| End-use (°C) | -40°C to +90°C | |
| **Flammability** | | |
| Sample mounted on aluminium | B,s1-d0 | EN 13501-1 |
| **Solvent and chemical resistance** | | |
| Resistance to most: | Water, water and detergent,alcohols | unaffected |
| | Oil, gasoline, gasoline-oil | affected (lifting around edges) |

## EXPECTED DURABILITY

| | | |
|---|---|---|
| Central Europe Zone 1 | | |
| Black & White | 5 years | ISO 4892-2 |
| Transparent & Colours | 4 years | ISO 4892-2 |
| Metallics | 3 years | ISO 4892-2 |

Note : Exposure to severe temperatures, ultraviolet light, and/or conditions in Southern European countries, tropical, sub-tropical or desert regions will cause more rapid deterioration. This also applies to polluted areas, high altitudes and south-facing exposure. No durability warranty is given for horizontal exposure.

*DISCLAIMER*

For more information on the durability and exposure please visit the “Mactac Technical Bulletin TB 7.5 Outdoor Durability of Mactac Graphics - Self-adhesive films” on the www.https://www.mactacgraphics.eu website.

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*Contact*
*Email: mactac.europe@mactac.eu*
*Website: www.mactacgraphics.eu*