



## Technical Bulletin

### CMR-435/CMR-435.M 1C-Protection-Film (high-gloss/matt)

### CMR-435.S 1C-Protection-Film "hand use"

Last Revision:

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Version:

V-2020-001

HR 1008 / 1015

#### 1. Characteristic:

**CMR-435/CMR-435.S/CMR-435.M** is a water based one-component clear coat (self-crosslinking), its basic is acrylate-polyurethane.

#### 2. Applications:

**CMR-435/CMR-435.S/CMR-435.M**, is used as protection and finishing of digital printed PVC tarpaulins, other vinyl films and non-printed flexible surfaces too. Medias printed with pigmented solvent inks (logos, lettering, pictures) are protected against attrition and scratches.

Coated surfaces achieve outstanding easy-to-clean properties.

Because of its water and weather resistance, this protection film is used especially for outdoor applications e. g. for sealing large format billboards and truck side curtains and for their long-term protection against UV light.

In general the application is made manually or by machines and liquid coater (Mayer bar).

#### 3. Typical Data:

|  |   |           |
|--|---|-----------|
| Basic:   | aqueous acrylatic polyurethane dispersion   |           |
| Colour:  | yellowish                                   |           |
| Solubility:                                      | miscible with deioned water                 |           |
| Wet film:  | 70 - 80 $\mu$                               |           |
| Dry film:  | 20 - 30 $\mu$                               |           |
| Spreading rate:                                  | 10 - 15 sqm per kg                          |           |
| Solids content:                                  | 36 - 40 %                                   |           |
| Specific gravity/density (20 °C):                | 1.05 g/cm <sup>3</sup>                      |           |
| pH value:  | 7.0 - 8.0                                   |           |
| Neutrality:                                      | ammonia                                     |           |
| Viscosity at 20 °C (4 mm DIN flow cup):          | 40 - 50 s                                   | CMR-435   |
| Viscosity at 20 °C (4 mm DIN flow cup):          | 15 - 20 s                                   | CMR-435.S |
| Viscosity at 20 °C (4 mm DIN flow cup):          | 20 - 25 s                                   | CMR-435.M |
| Minimum film forming temperature:                | approx. 0 °C                                |           |
| Volatiles/VOC:                                   | approx. 6.5 %                               |           |
| <u>Drying (at 50 <math>\mu</math> wet film):</u> |   |           |
| Air drying at room temperature 20 - 25 °C:       | dust-free: approx. 30 min, not tacky: 12 h. |           |
| Forced drying at 60 - 80 °C:                     | dust-free: approx. 30 s                     |           |

#### 4. Properties:

Transparent, high-gloss or matt

High flexibility

Scratch resistance, abrasion resistance

High chemical resistance

Easy-to-clean, polishable

UV protection

Elastic film (over 200 %)

Blocking temperature 145 °C, cold stable until -20 °C

Plasticizer blocking feature

High frequency welded

Coated surfaces can be varnished after 12 hours

The high-gloss version is suitable for thermoforming and embossing (short time thermostable up to 180 °C).

Without pre-treatment the system is suitable for all PVC and vinyl plastics.

With corona pre-treatment the system is suitable as a coating for all kinds of plastics.

#### 5. Recommendation for end-use:

Stir before using.

Crosslinking without hardener, self-crosslinking.

The processing time of the lacquer depends very strongly on the environment temperature.

It should lie between 18 °C and 30 °C.

The relative humidity should not exceed 60 %.

Surfaces to be varnished must be cleaned fat free and must be prepared correspondingly.

The viscosity of the lacquer was adjusted for manual application by roll (e. g. Velours).

For spraying or automatic application further adjustment can be necessary.

In this case a dilution of max. 5 % water is possible.

Alternative application: spraying (spray-viscosity: 15 - 30 s)

The application equipment (coater, rods, cable, pumps, drums) are to be cleaned after use simply with water immediately in order to avoid dried varnishes.

Areas of dried varnishes can be cleaned with isopropyl alcohol (IPA).

Dried varnishes can be removed with suitable polish remover.

**Our recommendation: CMR-914 Special Thinner.**

Don't use nitro thinner!

After around one week the cross-linking process is finished and the surface has reached its definite chemical resistance and physical properties.

Based on different chemical composition of plastics, foils and inks we recommend to make own tests.

Because of its quick drying property this laminate can be used by manually and also by machine processing.

## 6. Storage:

The product may be stored at least 6 months if kept in tightly closed container and below 25 °C.  
Protect against cold.  
Don't store and apply the product below +5 °C.

## 7. Safety:

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials.  
The Material Data Sheet informs on all data relevant to the safety of this product.  
It contains information concerning classification, transport and storage of the product and also further information regarding handling, safety and ecology.

## 8. Further Information:

These information reflect our current state of the knowledge and they are intended to inform on our products and its application possibilities. They cannot deduce any legally binding guarantee regarding specific properties of the products or their suitability for definite applications. Also they do not release the user to make test of our products concerning its suitability for the planned applications.  
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