



Technical Bulletin

CMR-440 2C-Clear Coat for Tarpaulin - "hand use"

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V-2020-001

HR 1022

1. Characteristic:

CMR-440 is a water based clear coat (2-component), its basic is polyurethane. It is to be cross-linked by CMR-640 (10:1).

2. Applications:

CMR-440 is used as high gloss and high flexible liquid laminate on digital printed PVC tarpaulins, and non-printed flexible surfaces too.

Medias printed with pigmented solvent inks, Latex and UV inks are protected against attrition and scratches.

Coated surfaces achieve outstanding colour brilliance and easy-to-clean properties.

Because of its water and weather resistance, this protection film is used especially for outdoor applications.

In general the application is made manually by roller.

3. Typical Data:

Basic:	aqueous polyurethane dispersion
Colour:	milky white
Crosslinker:	CMR-640 (10:1)
Potlife:	ca. 4 hours (20 °C)
Solubility:	miscible with deioned water
Wet film:	70 - 80 µ
Dry film:	20 - 30 µ
Spreading rate:	10 - 15 sqm per kg
Solids content:	30 - 35 %
Specific gravity/density (20 °C):	1.05 g/cm ³
pH value:	7.0 - 8.0
Neutrality:	ammonia
Viscosity at 20 °C (4 mm DIN flow cup):	12 - 18 s
Minimum film forming temperature:	approx. 0 °C
Volatiles/VOC:	approx. 10 %
<u>Drying (at 50 µ wet film):</u>	
Air drying at room temperature 20 - 25 °C:	dust-free: approx. 2 - 3 h, dry-to-touch: 16 - 20 h.
Forced drying at 60 - 80 °C:	dust-free: approx. 30 s.

4. Properties:

Transparent, high-gloss

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

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.

The crosslinking process is reached by adding of the hardener.

Weigh lacquer and crosslinker at the recommended ratio.

The crosslinker is added up to the lacquer in a recommended concentration.

Use a mechanical stirring unit in order to add up the hardener.

Use propeller mixer with 500 to 2,000 turns per minute, for deaeration.

Stirring only by hand is unsuitable to create a homogeneous mixture.

Stirring constantly while adding crosslinker slowly.

Stir carefully for at least 5 min at moderate speed in order to avoid air intake.

After stirring do not touch the mixture for 15 min.

After totally dispersed both components and achieved a homogeneous lacquer apply a suitable filter (50 µ).

Processing time at room temperature for min. 4 hours (but shorter at higher temperatures).

The potlife 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. 10 % 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.

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, surity 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.

Rights regarding trademarks and patents also will have to be observed.

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