Dow Coating Materials

RHOPLEX™ 800h Acrylic Binder

For Low-VOC Gloss Paints

RHOPLEX™ 800h Acrylic Binder was developed to allow for early hardness development in low-VOC gloss paints. Its unique morphology with ambient crosslinking enables performance properties typically associated with higher VOC coatings. Proper formulations using RHOPLEX™ 800h Binder show improved hardness, tackiness, block resistance and feel properties – particularly in high-gloss and deep-tone paints.

Features & Benefits

- Ultra-low VOC capable
- Formulation flexibility in deep tone, semi-to-high gloss paints
- Excellent early and overall hardness
- Excellent print resistance
- Excellent scrape resistance
- Good block resistance
- Solvent-free capable[1] and APEO-free[2]

[1]Manufactured without solvent, may require plasticizers in some formulations
[2]Manufactured without APEO surfactants

Improved Hardness Profile

As demonstrated in Figure 1, hardness development of a high gloss, deep tone paint formulated with RHOPLEX™ 800h Binder shows significant improvement compared to the competitive and commercial alternatives.

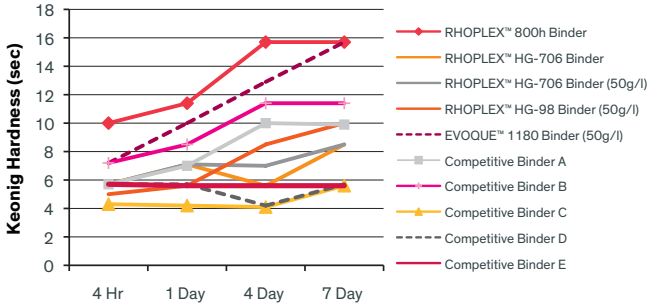

Figure 1. Hardness evaluated by ASTM-D4366 based method. 5mil draw-downs of 4% PVC / 30% VS paints tinted with 12oz of black colorant were made on aluminum panels and hardness measured over 7 days.

Typical Physical Properties of RHOPLEX™ 800h Binder

Property	Typical Values
Chemistry	Acrylic
Solids (wt%)	46%
pH	8
MFFT (°C)	0

NOTE: These are typical properties, not to be construed as specifications.

Reduced Tack

Compared to paints formulated with competitive binders, coatings formulated with RHOPLEX™ 800h Binder are less tacky, which is especially important when choosing a paint for trim surfaces, windows and door frames, as shown in Figure 2.

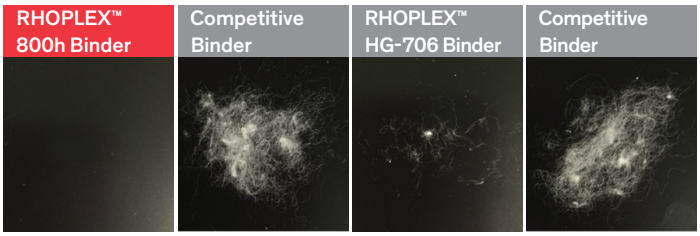

Figure 2. Tackiness evaluated by amount of cottonball remaining after exposed to paint films with a 1000g weight for 15 minutes. 5mil draw-downs of 4% PVC / 30% VS paints tinted with 12oz of black colorant were made on aluminum panels and dried for 24 hours before testing.

Print Resistance

RHOPLEX™ 800h Binder shows excellent resistance against imprinting – important for painted window sills and trim – compared to paints formulated with competitive and commercial binders (see Figure 3).

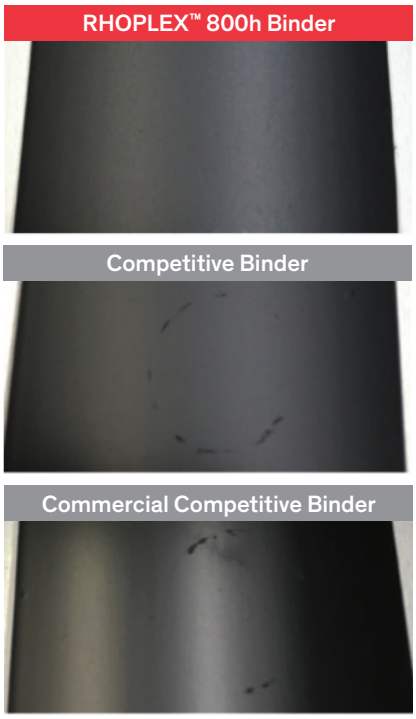

Figure 3: Print resistance evaluated by ASTM-D2064 based method. 5mil draw-downs of 4% PVC / 30% VS paints tinted with 12oz of black colorant were made on aluminum panels and dried for 24 hours before lids were placed on films with 1000g weight for 20 hours.

Scrape Resistance

Paints formulated with RHOPLEX™ 800h Binder can offer excellent scrape resistance performance far exceeding other competitive binders (see Figure 4).

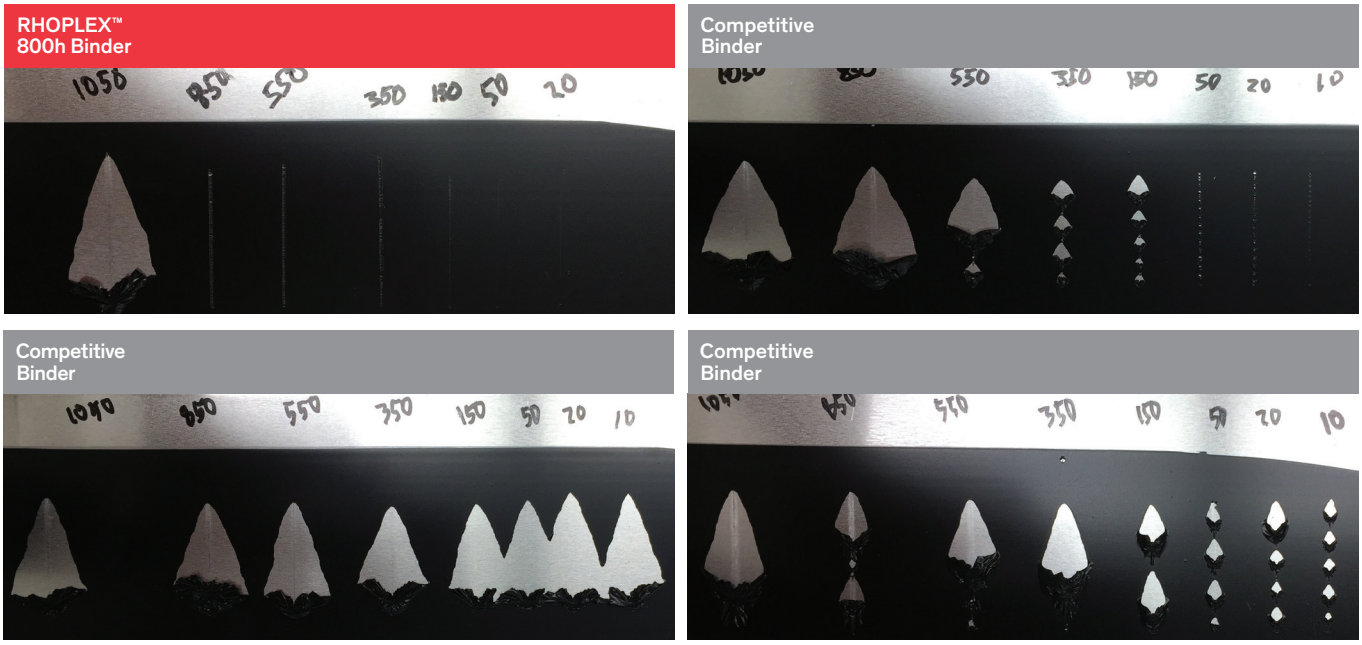

Figure 4. Scrape resistance evaluated by ASTM-D2197 based method. 5mil draw-downs of 4% PVC / 30% VS paints tinted with 12oz of black colorant were made on aluminum panels and dried for 24 hours before a controlled metal loop stylus was slid across the films with increasing weight and film damage observed.

Performance Summary

For improved hardness in low-VOC gloss paints, RHOPLEX™ 800h Binder demonstrates excellent tack, block, and print resistance. As demonstrated in Table 1, performance exceeds EVOQUE™ 1180 Binder and RHOPLEX™ HG-706 Binder.

Performance relative to RHOPLEX™ HG-706	RHOPLEX™ 800h	RHOPLEX™ HG-706	EVOQUE™ 1180
Typical formulation VOC	Near 0	50	50
Coalescing agent demand	+	=	-
Gloss	=	=	=
Tack -1 Day (Zapon)	++	=	+
Tack -7 Day (Zapon)	=	=	=
Block -1 Day (RT&Hot)	+	=	+
Block -7 Day (RT&Hot)	+	=	+
Print Resistance -1 Day	++	=	=
Print Resistance -7 Day	++	=	=
Hardness -1 Day (Pencil)	++	=	=
Hardness -7 Day (Pencil)	++	=	=

Table 1. Paint formulations: 0% PVC / 30% VS accent bases, tinted with 12oz of black colorant.

Dow Coating Materials
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www.dowcoatingmaterials.com

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