

KY Shine Water-based OPV's



Blanket and Roller Conditioner

KS-702 Blanket and Roller Spray

- Formulated to be a cleaner and conditioner for rollers, blankets and printing plates
- Spray lightly on the rollers while press is running if Kentucky Shine is drying

Sheetfed (SF) Kentucky Shine Overprints

KS-117 High Gloss SF OPV

- Enhanced press stability
- Excellent set and dry speed along with excellent gloss and clarity
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-190 High Body Press Stable Gloss OPV

- Higher body, more press stable KS-117
- Excellent set and dry speed along with excellent gloss and clarity
- Improved rheology to help prevent dripping through the ink fountain
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-108LT Low Tack Satin SF OPV

- Satin version of KS-117
- Excellent set and dry speed along with excellent gloss and clarity
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-191 High Body Press Stable Satin SF OPV

- Satin version of KS-190
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-110 Matte SF OPV

- Matte version of KS-117
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-192 High Body Press Stable Matte SF OPV

- Matte version of KS-190
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-104 KY Shine SF OPV & UV Primer

- The original KY Shine
- Can be evaluated when imprinting, hot foil stamping, UV coating or gluing

KS-151 Press Stable Gloss Primer OPV

- Primer version of KS-117
- Excellent set and dry speed along with excellent gloss and clarity
- Can be evaluated when imprinting, hot foil stamping, UV coating or gluing

KS-193 High Body Press Stable Primer

- Primer version of KS-190
- Excellent set and dry speed along with excellent gloss and clarity
- Improved rheology to help prevent dripping through the ink fountain
- Can be evaluated when imprinting, hot foil stamping, UV coating or gluing

KS-196 High Rub High Body Gloss OPV

- Better rub and scuff resistance than KS-190
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-146 Soft-Feel Matte SF OPV

- Provides matte appearance with a soft, velvet like feel
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

Heatset (HS) Kentucky Shine Products

KS-145 HS High Gloss Fast Setting OPV

- Excellent gloss and non-yellowing when compared to oil based overprints
- KS-145 is the fastest drying heatset Kentucky Shine
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-168 Heavy Body HS OPV

- Gel like structure to help prevent dripping through the ink fountain
- Formulated to run on high speed web offset presses with minimal misting
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-172 HS Heavy Body Satin Acrylic OPV

- Satin version of KS-168
- Gel like structure to help prevent dripping through the ink fountain
- Formulated to run on high speed web offset presses with minimal misting
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-149 HS Matte Fast Setting OPV

- Matte version of KS-145
- Formulated to run on high speed web offset presses with minimal misting
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

KS-123 HS Heavy Body Acrylic Primer

- Excellent gloss and non yellowing when compared to oil based overprints
- Formulated to run on high speed web offset presses with minimal misting
- Can be evaluated when imprinting, hot foil stamping, UV coating or gluing

KS-143 HS Matte Soft-Feel OPV

- Matte appearance with a soft, velvet like feel
- Not recommended when imprinting, hot foil stamping, UV coating or gluing

Revised: 01/18/2016

Using Kentucky Shine



INTRODUCTION:

Kentucky Shine Press Applied Overprint Varnishes; also known as ink unit coatings, are water-based products formulated as an alternative to typical water-based coatings. Conventional water-based coatings are applied using a special coating unit at the end of a sheetfed litho press. Since Kentucky Shine Press Applied Overprints are applied using the last printing unit of a sheetfed or heatset litho press, an expensive coating unit is not required to obtain the same desired results.

KENTUCKY SHINE ADVANTAGES:

- Kentucky Shine is applied using the last printing unit on a sheetfed or heatset litho press with the dampener turned off eliminating the need for expensive coating equipment.
- Excellent for printers who would like to take advantage of all the capabilities of aqueous coatings without having to spend the money for a coater.
- Performs well on a wide variety of sheetfed and heatset litho presses.
- Can be applied in-line over wet inks with very fast set speed or off-line over properly formulated dry inks.
- Available in high gloss, matte finishes and primers.
- Can be cleaned up with ammonia-based detergents and household cleaners.
- More stable on press than most competitive products.
- Dries quickly and requires less spray powder than oil-based overprint varnishes.
- Non-yellowing, excellent rub resistance and does not crack when folded.

PRESSROOM INSTRUCTIONS - PREPARATION AND RUNNING:

Following the procedures and precautions below when planning to use Kentucky Shine is critical to successful use.

TAKE DAMPENING ROLLERS OFF THE PLATE. DO NOT USE FOUNTAIN SOLUTION.

USE VERY LOW PRESSURE SETTINGS FOR ROLLERS, BLANKET AND PRINTING PLATE (STANDARD VARNISH PLATE).

CLEAN ROLLERS WITH REGULAR PRESS AND ROLLER WASH TO REMOVE ANY RESIDUAL OIL-BASED INK OR OVERPRINT VARNISH. **DO NOT** USE FOR CLEANING KY SHINE.

FURTHER CLEAN AND CONDITION ROLLERS WITH KS-702 BLANKET AND ROLLER SPRAY.

DO NOT POUR KENTUCKY SHINE INTO FOUNTAIN UNTIL JOB IS REGISTERED AND READY TO RUN.

WIPE BLANKET AND PLATE WITH KS-702 BLANKET AND ROLLER SPRAY JUST PRIOR TO USING KENTUCKY SHINE.

DO NOT USE INKS CONTAINING REFLEX BLUE (ALKALI BLUE), RHODAMINE, METHYL VIOLET, FLUORESCENT AND OTHER ALKALI-SENSITIVE PIGMENTS. OTHER RED PIGMENTS SUCH AS LITHOL RUBINE, LITHOLS AND 2B REDS MAY BE SENSITIVE TO ALKALI. **DISCUSS WITH INK SUPPLIER.**

DO NOT STOP PRESS FOR MORE THAN A FEW MINUTES UNLESS YOU INTEND TO CLEAN BLANKET AND PLATE WITH KS-702 BLANKET AND ROLLER SPRAY.

CLEAN ENTIRE UNIT IF PRESS IS GOING TO BE DOWN FOR AN EXTENDED PERIOD OF TIME.

MONITOR KENTUCKY SHINE UNIT WHILE RUNNING TO OBSERVE ANY DRYING ON ENDS OF ROLLERS. LIGHTLY SPRAY KS-702 BLANKET AND ROLLER SPRAY ONTO ROLLERS AS NEEDED.

BLANKET AND PLATE INFORMATION:

Blanket packing should be one centimeter narrower than the blanket size to avoid varnish build-up, slinging and paper curl. A normal plate can be used. Kentucky Shine does not lithograph, so dampening rollers should **NOT** be engaged..

Special methods have been developed for those printers that require pattern application of Kentucky Shine Press Applied Overprint Varnishes. A cut blanket or photopolymer flexographic plate mounted to the blanket cylinder are two methods successfully being used.

CUT BLANKETS:

By carefully cutting a blanket down to the backing and peeling away the rubber layer, pattern application can be achieved. There are two methods that can be employed, dependent on the desired end result.

For simple dropouts or glue flaps, the area to be removed can be outlined with a marker. By carefully cutting the lines with a hand held razor knife and a steel rule, one can achieve fairly good results. This method requires some planning for registration and proper fit.

More complicated designs will require a more precise method. Folding carton printers must cut and score cartons. They use a computer driven CAD-CAM drawing machine to prepare a vinyl overlay to register cuts and scores to the printed sheet. By replacing the pen/marker in the drawing stylus with a cutting blade (EXACTO razor blade), a blanket can be accurately and quickly cut to prescribed depth. Unwanted surface is peeled away and the blanket is ready for use.

PHOTOPOLYMER FLEXPRESS PRINTING PLATES:

Photopolymer plates, like blankets, will be mounted with metal clamps. Plates tend to stretch or elongate when tightened on the cylinder but is predictable. An initial "fingerprinting" allows compensation for stretching to be built into the process. Two different types of plate material have successfully been used;

DuPont CL4 is available in sizes up to 50" X 60" in .045 inch thickness. Because of the thickness, a CL4 plate can only be mounted on the blanket cylinder. The composition does not tolerate hydrocarbon solvents (press wash) very well.

Polyfibron FLAL is available in sizes up to 55" X 60" and .035 inch thickness for larger presses. The thinner .035 inch plate can be mounted on many lithographic press plate cylinders. In addition, the FLAL is very tolerant of hydrocarbon solvents.

Contacting plate suppliers for additional information is recommended.

CUT BLANKETS VERSUS PHOTOPOLYMER PLATES?

Cutting blankets is probably more popular and less expensive than photopolymer plates. Regardless, both options deliver overprint varnish in a predictable and consistent manner.

CLEANING AND PREPARING TO USE KENTUCKY SHINE:

With a little effort, the press can be properly cleaned and conditioned.

- 1) It is very important to clean the entire unit with normal press cleaning materials. If the unit previously had color in it, extra effort will be required to ensure it is very clean.
- 2) Spray KS-702 Blanket and Roller Spray lightly on rollers and let press idle for a few minutes. This will serve the dual function of conditioning rollers to receive Kentucky Shine and provide additional cleaning. The alkaline nature of KS-702 will help remove any colorants that remain from the first clean-up. Remove the excess with a cloth dampened with KS-702.
- 3) Spray a cloth lightly with KS-702 and wipe blanket and plate to clean and condition.

INK INFORMATION:

As a precaution, always evaluate new pigments and ink formulations with overprint that will be used.

Use inks that are formulated with polyethylene wax. Waxes or slip additives like silicone, PTFE or microcrystalline wax may cause problems such as crawling, pin holing, or uncontrolled migration through the varnish.

Do not use inks containing pigments that may bleed or change color when coming into contact with an aqueous alkaline overprint varnish. The pigments that exhibit this alkali sensitivity include:

-Alkali Blue (Reflex) -YS Rhodamine -BS Rhodamine -Red Lake C -Fluorescents -Methyl Violet

START UP:

Once ready to print, pour Kentucky Shine into fountain. Open keys or lengthen sweep to apply a little more overprint than normal settings with a conventional oleoresinous overprint. Lightly spray blanket with KS-702 and start printing. Once press is running, coating weight can be reduced to achieve desired results.

Kentucky Shine is more stable than other competitive products, however, it still sets and dries a lot faster than conventional overprints. During start-up, a low coating weight may exaggerate set speed and result in a tacky blanket.

SHEETFED DRYING CONDITION RECOMMENDATIONS:

Best results on a sheetfed press are achieved by providing a sufficient volume of warm air directed onto the varnished surface. Use a minimum of IR heat to assist drying. **Exercise care to avoid load temperatures in excess of 90°F.** If sheets are too hot, they may stick together in the load.

WHILE RUNNING:

Monitor rollers while running. If it appears the overprint is starting to tack up or dry on rollers, lightly spray KS-702 Blanket and Roller Spray on rollers as needed. Take care to avoid spraying too much on rollers. **EXCESSIVE USE OF KS-702 MAY SLOW DRYING OF KENTUCKY SHINE OVERPRINT.**

If the press is going to be stopped for a period of time longer than a few minutes, clean blanket and plate with KS-702. This minimizes Kentucky Shine drying on blankets and plates which may cause delivery and application problems. If possible, idle the press during downtime and spray KS-702 lightly on rollers as needed to keep drying to a minimum. By following these precautions, the press will continue to run well when printing is resumed.

CLEANING THE PRESS:

While the overprint is wet, it can easily be cleaned with mild detergents and water. For dried areas, KS-702 can be sprayed on the surface to solubilize/rewet the overprint. Follow with the detergent/water mixture. **DO NOT ALLOW OVERPRINT TO DRY ON PRESS.**

WORKING WITH THE FINISHED SHEETS:

Sheets that are overprinted with Kentucky Shine can dry in about 10-20 minutes after application. Some papers and inks may require more time or spray powder to minimize blocking conditions. Proper drying is dependent on film thickness, temperature and humidity. Excessive ink film thickness must be taken into consideration as well.

ADDITIONAL INFORMATION:

Kentucky Shine is a water-based material and subject to loss of evaporative materials in the overprint. KS-702 is formulated to replenish these materials on press. Please take every precaution to keep containers covered when not in use.

Kentucky Shine is a non-catalyzed water/glycol overprint. Gloss versions are not as high in gloss as typical UV coatings or catalyzed coatings.

Additional Tips and Precautions When Running Heatset Kentucky Shine Overprints

- 1) Ensure printer understands the procedure for using Kentucky Shine Press Applied Overprints. For example, ensuring dampening unit is NOT engaged.
- 2) Ensure printer understands web temperature must be adjusted to provide adequate drying. There may be a different type of visible plume exiting the stack due to the use of glycol versus conventional ink oil.
- 3) Ensure printer is aware extremely high press speeds may contribute to misting around the printing unit.

- 4) Contains a very substantial slip/wax package. As a result, addition of a silicon solution to the web before the folder may not be necessary.
- 5) If the printing unit has recently been used for ink, a more thorough cleaning will be required. For example, applying a liberal amount of Kentucky Shine to rollers and idling will actually clean some imbedded color from pores of rollers. A good cleaning afterwards with KS-702 will provide additional cleaning.
- 6) **DO NOT USE SILICONE/WATER SOLUTION UNLESS ABSOLUTELY NECESSARY. THIS CAN CONTRIBUTE TO BLOCKING AND STICKING AFTER JOB IS PRINTED.**

There is some trial and error required to determine the best combination of press and oven settings when first using Kentucky Shine. Multiple combinations may be necessary when various inks and substrates are part of the standard operation. Overall, printers are quite pleased with the performance of Heatset Kentucky Shine when they understand the performance properties and how to successfully use the product. Heatset Kentucky Shine provides less yellowing, a coating-like feel and smooth appearance on the finished sheet.



FOR YOUR PROTECTION:

The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning uses or applications are only the opinion of KUSTOM SERVICES, INC., and users should make their own tests to determine the suitability of these product for their own particular purposes. However, because of numerous factors affecting results, KUSTOM SERVICES, INC. makes no warranty of any kind, expressed or implied, including those of merchantability and fitness for particular purpose, other than material conforms to its applicable current Standard Specifications. Standard Specifications, although current at time of publication, are subject to change without notice. Please refer to TDS and SDS for additional information

TECHNICAL DATA SHEET

KS-702

KY Shine Blanket and Roller Spray



Product Description:

KS-702 is a Blanket and Roller Spray for use with Kentucky Shine Press Applied Overprint Varnishes. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM SERVICES, LLC representative.

Physical Properties:

- **Viscosity:** 13 – 14" #2 Zahn @ 77F
- **pH:** 11 – 12.5 @ 77°
- **Specific Gravity:** 1.02

Application Information:

1. KS-702 is designed to be applied with a spray bottle. After the press has been properly cleaned with normal press wash procedure, a small amount of KS-702 should be misted onto surface of blanket and rollers. This will condition the surface to better accept Kentucky Shine. A final cleaning with a shop rag dampened with KS-702 will be necessary to remove any excess. Keep an eye on roller train while running.
2. If it appears that overprint is starting to tack up or dry on rollers, lightly spray some KS-702 on rollers as needed. Take care to avoid spraying too much on rollers. **Excessive use of KS-702 may retard drying of Kentucky Shine products. As a result, setting and drying may be slowed to a point where blocking and sticking may occur.**
3. If press is going to be stopped for a period of time longer than a very few minutes, clean blanket and plate with a shop rag dampened with KS-702. This will minimize the possibility of Kentucky Shine drying on blanket and plate causing delivery and application problems. If possible, idle press during downtime and lightly spray KS-702 on rollers as needed. By following these precautions, the job will continue to run well when printing is resumed.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET



KS-117

KY Shine High Gloss SF OPV

Product Description:

KS-117 is a higher rub, more press stable version of **KS-104**. It is formulated as an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instruction** booklet for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent clarity and gloss
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended for use as a UV coating primer
- Not recommended for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Viscosity:** 18 – 22 Poise
- **pH:** 8.0 - 8.5 @ 77°
- **Specific Gravity:** 1.03

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instruction booklet**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/19/2015

TECHNICAL DATA SHEET



KS-190

KY Shine High Body Press Stable Gloss OPV

Product Description:

KS-190 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products.
- Excellent clarity and gloss.
- Excellent set and dry speed
- Has improved rheology to prevent dripping thru ink fountain.
- Good rub and scuff resistance (test versus specifications prior to use).
- Not recommended as a UV coating primer, for foil stamping, gluing or imprinting and film laminating.

Physical Properties:

- **Tack:** 10 – 12 @ 400 RPM's, 1 minute, 90F
- **Viscosity:** 30 – 60 Poise
- **pH:** 7.5 – 8.0 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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TECHNICAL DATA SHEET



KS-108LT

KY Shine Low Tack Satin SF OPV

Product Description:

KS-108LT is a low tack satin version of **KS-117**. It is formulated as an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instruction** booklet for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Excellent satin appearance
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended for use as a UV coating primer
- Not recommended for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 16 - 19 @ 400RPM, 1 minute
- **Viscosity :** 20 – 29 Poise
- **pH:** 8.0 - 8.5 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instruction booklet**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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TECHNICAL DATA SHEET

KS-191

KY Shine Satin High Body Press Stable OPV



Product Description:

KS-191 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent satin appearance and non burnishing characteristics. Typical gloss readings of 25-30% with a 60° gloss meter, dependent on ink and substrate
- Excellent set and dry speed
- Improved rheology to prevent dripping thru the ink fountain
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV coating primer or for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 10 – 12 @ 400 RPM, 1 minute
- **Dynamic Viscosity:** 70 -110 Poise (Rheometer @25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.5 – 8.0 @ 77°
- **Specific Gravity:** 1.05

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/21/2015

TECHNICAL DATA SHEET

KS-110

KY Shine SF Matte OPV



Product Description:

KS-110 is the matte version **KS-117**. It is formulated as an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instruction** booklet for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Matte finish
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV Coating primer
- Not recommended for gluing, hot foil stamping and imprinting
- Fast setting and drying speed

Physical Properties:

- **Tack:** 10 - 13 @ 400RPM, 1 minute
- **Viscosity:** 45 – 50 Poise
- **pH:** 8.0 - 8.5 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instruction booklet**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/19/2015

TECHNICAL DATA SHEET

KS-192

KY Shine Matte High Body Press Stable OPV



Product Description:

KS-192 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent matte appearance and non burnishing characteristics. Typical gloss readings of 10-15% with a 60° gloss meter, dependent on ink and substrate
- Excellent set and dry speed
- Improved rheology to prevent dripping thru the ink fountain
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV coating primer or for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 10 – 12 @ 400 RPM, 1 minute
- **Dynamic Viscosity:** 100 - 150 Poise (Rheometer @25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.5 – 8.0 @ 77°
- **Specific Gravity:** 1.05

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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TECHNICAL DATA SHEET



KS-104

KY Shine SF OPV & UV Primer

Product Description:

KS-104 is the original Kentucky Shine. It is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instruction** booklet for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Excellent clarity and gloss.
- Excellent set and dry speed
- Good rub and scuff resistance (test versus specifications prior to use)
- Can be evaluated for use as a UV coating primer
- Can be evaluated for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Viscosity:** 8 – 11 Poise
- **pH:** 8.0 – 8.5 @ 77°
- **Specific Gravity:** 1.03

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instruction booklet**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

FOR YOUR PROTECTION:

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DATE REVISED 01/19/2015

TECHNICAL DATA SHEET

KS-151

KY Shine Press Stable Gloss Primer



Product Description:

KS-151 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent gloss finish
- Excellent set and dry speed
- Recommended as a UV coating primer or hot foil stamping, gluing, imprinting and film laminating (should test)

Physical Properties:

- **Tack:** 6 - 7 @ 400 RPM, 1 minute
- **Dynamic Viscosity:** 30 – 45 Poise (Rheometer @25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.5 – 8.0 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine – Press Instruction** booklet). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/19/2015

TECHNICAL DATA SHEET

KS-193

KY Shine Gloss High Body Press Stable Primer



Product Description:

KS-193 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent Gloss finish
- Excellent set and dry speed
- Improved rheology to prevent dripping thru the ink fountain
- Good rub and scuff resistance (test versus specifications prior to use)
- Recommended as a UV coating primer and for hot foil stamping, gluing, imprinting and film laminating (should test)
- May work as an OPV to correct gloss ghosting problems

Physical Properties:

- **Tack:** 10 – 12 @ 400 RPM, 1 minute
- **Dynamic Viscosity:** 30 – 60 Poise (Rheometer @25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.5 – 8.0 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine – Press Instruction** booklet). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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TECHNICAL DATA SHEET

KS-196

KY Shine High Rub High Body Gloss OPV



Product Description:

KS-196 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent clarity and gloss
- Excellent set and dry speed
- Improved rheology to prevent dripping thru the ink fountain
- Excellent rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV coating primer or for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 6 – 8 @ 400 RPM, 1 minute
- **Dynamic Viscosity:** 30 – 60 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.8 – 8.3 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-146

KY Shine Soft Feel Matte SF OPV



Product Description:

KS-146 is formulated as a special effect tactile aqueous “Soft-Feel” opv for application to paper and paperboard through the inking unit of a sheetfed offset press. Typical applications would be commercial printing. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Excellent matte finish with velvet like feel
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV primer or for hot foil stamping, gluing, imprinting or film laminating

Physical Properties:

- **Tack:** 10 – 12 @ 400RPM, 1 minute
- **Dynamic Viscosity:** 30 – 60 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.0 - 8.5 @ 77°
- **Specific Gravity:** 1.04

Application Information:

- The best Soft-Feel effect can be achieved by carefully applying a heavier film thickness but **NOT** via a double-bump application. Exercise care to ensure that the sheets are dry
 - KS-146 is recommended for single-sided application only (wet trap or off-line)
 - This product exhibits a characteristic cling in face-to-face conditions and may interfere with feeding, cutting, folding, etc.
 - We recommend using short lifts for jobs with heavy ink coverage
 - Ensure that the ink system is dry. Avoid using with extreme stay open inks
- 1 **Drying Requirements:** For best results, aqueous overprints varnishes require a sufficient volume of warm air directed onto the varnished surface. The use of IR units (short of medium wavelength) can provide drying assistance in many applications. Exercise care to avoid load temperatures in excess of 90° F.
 - 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
 - 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-145

KY Shine HS High Gloss Fast Setting OPV



Product Description:

KS-145 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of an offset press. Typical applications would be commercial and publication printing. Please refer to **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Fastest Drying Heatset Kentucky Shine
- Enhanced press stability when compared to other products
- Excellent clarity and gloss
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommended as a UV coating primer, hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 10.5 – 12.5 @ 1200 rpm
- **Dynamic Viscosity:** 15 - 35 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.2 - 8.7 @ 77°
- **Specific Gravity:** 1.06

Application Information:

- **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
- For best results, disengage silicone applicator when running this product.
- **Application Weight:** Apply about 20-25% more than oil-based overprints.
- **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion.
- PTFE, micro crystalline wax or silicone may contribute to application problems.
- Avoid the use of fugitive pigments that may bleed or change color when in contact with an alkaline product (alkali blue, rhodamine, red lake C, fluorescent, and many others). As a precaution, always evaluate new ink formulations/technologies with this aqueous/glycol overprint varnish.

FOR YOUR PROTECTION:

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-168

KY Shine Heavy Body HS OPV



Product Description:

KS-168 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of an offset heatset press. The heavy body will minimize the tendency to drip through the ink fountain. Typical applications would be commercial and publication printing. Please refer to **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Non-misting properties at higher press speeds and less likely to drip through the fountain
- Excellent gloss and clarity with good rub/scuff resistance
- Fast setting and drying speed with excellent press stability
- Not UV coatable or imprintable

Physical Properties:

- **Tack:** 25 – 29 @ 1200 RPM, 1 minute
- **Dynamic Viscosity:** 110 – 170 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.0 - 8.5 @ 77° F
- **Specific Gravity:** 1.07

Application Information:

- **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
- For best results, disengage silicone applicator when running this product.
- **Application Weight:** Apply about 20-25% more than oil-based overprints.
- **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion.
- PTFE, micro crystalline wax or silicone may contribute to application problems.
- Avoid the use of fugitive pigments that may bleed or change color when in contact with an alkaline product (alkali blue, rhodamine, red lake C, fluorescent, and many others). As a precaution, always evaluate new ink formulations/technologies with this aqueous/glycol overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-172

KY Shine HS Heavy Body Satin Acrylic OPV



Product Description:

KS-172 is an acrylic-based aqueous/glycol overprint varnish for application to paper through the inking unit of an offset heatset press. The heavy body will minimize the tendency to drip through the inking fountain. Typical application would include commercial and publication jobs when a satin aqueous appearance is desired. Please refer to the **Kentucky Shine Press Instructions** for press preparation and use. Please contact your Kustom Group Representative for additional information.

Performance Characteristics:

- Non-misting properties at higher press speeds and less likely to drip through the fountain
- Excellent satin appearance and non burnishing characteristics. A typical gloss reading is 25-30% with a 60° gloss meter. This is dependent on the ink, substrate
- Excellent press stability
- Fast setting and drying speed (determine optimum web temperature)
- **Do Not Use** as a UV coating primer, hot-foil stamping, gluing, imprinting or film laminating
- The use of silicone/water solution can contribute to blocking and sticking after printing

Physical Properties:

- **Tack:** 6 - 8 @ 1200 RPM, 1 minute
- **Dynamic Viscosity:** 25 – 55 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.0 - 8.5 @ 77°
- **Specific Gravity:** 1.04

Application Information:

- 1 **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
- 2 **Application Weight:** Apply about 20 to 25% more than oil base overprints.
- 3 **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, microcrystalline wax or silicone may contribute to application problems. Avoid the use of pigments that may bleed or change color when in contact with an alkaline product (refer to the **Kentucky Shine Press Instructions**). As a precaution, always evaluate new ink formulation and technologies with the aqueous overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-149

KY Shine HS Matte Fast Setting OPV



Product Description:

KS-149 is an aqueous overprint varnish for application to paper and paperboard through the inking unit of an offset heatset press. Typical applications would be commercial and publication printing. Please refer to **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Enhanced press stability when compared to other products
- Excellent clarity and mattiness
- Good rub and scuff resistance (test versus specifications prior to use)
- Not recommend for use as a UV coating primer
- Not recommend for hot foil stamping, gluing or imprinting and film laminating

Physical Properties:

- **Tack:** 16.0 – 18.0 @ 1200 rpm, 1 minute
- **Dynamic Viscosity:** 110 – 160 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.0 – 8.5 @ 77°
- **Specific Gravity:** 0.948

Application Information:

- **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
- For best results, disengage silicone applicator when running this product.
- **Application Weight:** Apply about 20-25% more than oil-based overprints.
- **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion.
- PTFE, micro crystalline wax or silicone may contribute to application problems.
- Avoid the use of fugitive pigments that may bleed or change color when in contact with an alkaline product (alkali blue, rhodamine, red lake C, fluorescent, and many others). As a precaution, always evaluate new ink formulations/technologies with this aqueous/glycol overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-123

KY Shine HS Heavy Body Acrylic Primer



Product Description:

KS-123 is formulated as an aqueous primer for application to paper and paperboard through the inking unit of an offset press. Typical applications would be commercial and publication printing. Please refer to **Kentucky Shine Press Instruction** booklet for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Excellent gloss
- Excellent press stability versus similar products
- Can be used as a UV Primer (test first)
- Will accept hot foil stamping and imprinting (test first)
- Can be considered for use as a primer to enhance the print quality of poor stock

Physical Properties:

- **Tack:** 25 – 29 @ 1200 RPM, 1 minute
- **Dynamic Viscosity:** 150 - 200 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 7.5 – 8.0 @ 77° F
- **Specific Gravity:** 1.09

Application Information:

1. **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
2. **Application Weight:** Apply about 20-25% more than oil-based overprints.
3. **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion. The use of PTFE, micro crystalline wax or silicone may contribute to application problems.
4. Avoid the use of fugitive pigments that may bleed or change color when in contact with an alkaline product (alkali blue, rhodamine, red lake C, fluorescent, and many others). As a precaution, always evaluate new ink formulations/technologies with this aqueous/glycol overprint varnish.

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DATE REVISED 01/05/2016

TECHNICAL DATA SHEET

KS-143

KY Shine HS Matte Soft Feel OPV



Product Description:

KS-143 is formulated as an aqueous “Soft-Feel” overprint varnish for application to paper and paperboard through the inking unit of an offset heatset press. Typical applications would be commercial and publication printing. Please refer to **Kentucky Shine Press Instructions** for press preparation and use. For any additional information please contact your KUSTOM GROUP, LLC representative.

Performance Characteristics:

- Excellent matte finish with velvet like feel
- **For best “Soft-Feel” effect**, try applying a slightly heavier film. One way to achieve this is by disengaging one or more form rollers. This adjustment helps improve transfer and increase the film thickness of **KS-143**.
- Care should be taken to adequately dry the thicker film. Please refer to drying requirements below
- Good rub and scuff resistance (test versus specifications prior to use)

Physical Properties:

- **Tack:** 14 – 16 @ 1200 RPM, 1 minute
- **Dynamic Viscosity:** 150 - 200 Poise (Rheometer @ 25C; 4cm, 2deg cone; 2.5 1/sec)
- **pH:** 8.2 - 8.7 @ 77°
- **Specific Gravity:** 1.07

Application Information:

- **Drying Requirements:** For best results, aqueous overprint varnishes require a sufficient volume of warm air directed onto the varnished surface. However, the lowest possible web temperature is desired that will adequately dry the ink and overprint. This is best determined by experimentation using the actual substrate and inks. If the temperature is too high, the overprint varnish will dry and trapped ink oils may erupt through the varnish layer resulting in blisters or volcanoes.
- For best results, disengage silicone applicator when running this product.
- **Application Weight:** Apply about 20-25% more than oil-based overprints.
- **Ink Formulary:** Limit wax to typical polyethylene to ensure proper inter-coat adhesion.
- PTFE, micro crystalline wax or silicone may contribute to application problems.
- Avoid the use of fugitive pigments that may bleed or change color when in contact with an alkaline product (alkali blue, rhodamine, red lake C, fluorescent, and many others). As a precaution, always evaluate new ink formulations/technologies with this aqueous/glycol overprint varnish.

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