

# 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.

#### FOR YOUR PROTECTION:

The information and recommendation in the publication are the best of our knowledge, reliable. Suggestions made concerning uses or application are only the opinion of KUSTOM SERVICES, LLC., and users should make their own test to determine the suitability of this product for their own particular purpose. However, because of numerous factors affecting results, KUSTOM SERVICES, LLC makes no warranty of any kind, expressed or implied, including those of merchantability and fitness for a particular purpose, other than that the material conforms to its applicable current standard specification. Standard Specification, although current at the time of publication, are subject to change without notice. Please refer to the MSDS for additional information.

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-9812



### Smoother Lay Soft Feel AQ Coating

#### Product Description:

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KS-9812 is a soft feel aqueous coating with enhanced lay and film forming properties to improve the appearance and robustness of the applied coating. KS-9812 is typically applied to paper and paperboard with litho in-line coaters and flexo presses that are equipped with chambered doctor blade anilox systems for commercial, folding carton and specialty print work. Contact Kustom Group for additional information, as it is important to fully understand the optimum conditions for success.

#### Performance Characteristics:

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- Soft-Feel exhibits an excellent matte appearance and non-burnishing characteristics.
- A 12-14 BCM anilox roller should provide the desired film thickness for "Soft-Feel" properties.
- A chambered doctor blade anilox configuration will exhibit a smoother appearance versus a 2-roll coater. If using a roller coater, we suggest using KS-9812HV.
- KS-9812 exhibits superior rub and scuff resistance.
- "**MAY BE SUITABLE**" for hot foil stamping, off-line UV coating, imprinting and gluing applications, but should be completely evaluated under production conditions using the actual substrate, ink, and materials for foil stamping, off-line UV coating, imprinting and gluing to ensure satisfaction throughout the entire process.

#### Application Advisements:

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- Ensure ink system will dry/cure thoroughly. Avoid extreme stay open and metallic inks.
- Use short lifts for sheetfed litho jobs with heavy ink coverage.

#### Physical Properties:

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- **Viscosity:** 20 - 22" #3 Zahn (Signature) @ 77° F
- **pH:** 8.2 -8.7 @ 77° F
- **Solids:** 32-36% Method 24
- **Shelf Life:** One year (unopened container)

#### Pigment Selection:

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Most aqueous coatings are alkaline in pH because of the presence of ammonia. We recommend that the printer avoid the use of inks containing pigments that may bleed or change color when being exposed to an aqueous coating. Pigments that typically exhibit this sensitivity to alkali include YS Rhodamine, BS Rhodamine, Methyl Violet, Fluorescent, Red Lake C, Alkali Blue (Reflex Blue) and possibly other pigments.

#### FOR YOUR PROTECTION:

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DATE REVISED 01/11/2016

# Technical Data Sheet

## KS-540

### Faster Curing Soft Feel UV Coating



#### Product Description

KS-540 is a matte UV curable coating for application in-line over UV litho, UV flexo and aqueous flexo ink systems where a soft feel effect is desired. Typical applications include commercial sheetfed printing on paper or paperboard substrates. For additional information, contact your KUSTOM SERVICES, INC. representative.

#### Performance Characteristics

- Soft Touch Feel & Matte Gloss (12+ BCM Anilox with  $\frac{3}{4}$ + inch lines to/from coating unit to achieve desired feel)
- Tougher film formation for faster presses
- Low thixotropy
- MAY BE crosslinked to improve chemical resistance<sup>1</sup>
- MAY BE imprintable, foil-stampable, glueable, etc., but proper testing is recommended

#### Physical Properties

- Viscosity 30 - 35 sec. #3 Zahn
- Specific Gravity 1.07
- VOC <1% (after cure)

#### End Use Considerations

<sup>1</sup>KS-540 does NOT contain a crosslinker which would limit its normal 6 month life. The addition of crosslinking materials can increase rub resistance but should be added press side. Since the use of crosslinker limits the pot life of the material to hours, it is NOT possible to return material for any reason once crosslinker is added and voids all warranties. Care should be used when using crosslinkers to limit the amount of wasted material.

KS-540 should be evaluated under production conditions using actual ink system and substrate to ensure leveling, intercoat adhesion, gloss and other performance characteristics are acceptable. In general, UV coatings may not exhibit complete intercoat adhesion over some substrates and a primer may be considered.

#### Storage and Handling Information

KS-540 is a unique UV curing product that is NOT generally compatible with epoxy acrylate based UV coatings. As a result, extra caution should be paid to flush and clean the coating unit before and after its use to make sure there is no cross contamination. Due to the unique nature of KS-540, not all normal UV press washes will clean it well. Kustom Group recommends its KS-718 for this purpose. If you choose a different wash up material, it should be checked to see how well it works with KS-540 before trying generally.

Care should be taken not to expose radiation curable products to temperatures exceeding 100°F for prolonged periods of time or to direct sunlight. Storage must be in a cool, well-ventilated and dry area or uncontrollable polymerization of the product may occur. Do not store this material under an oxygen-free atmosphere. This material should not be stored for more than six (6) months.

Certain precautions should be taken when handling this product. This product contains materials that may cause moderate skin injury (reddening and swelling) and/or sensitization. Please refer to the Material Safety Data Sheet (MSDS) prior to handling for further details.

#### **FOR YOUR PROTECTION:**

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DATE REVISED: 01/29/2015

# Technical Data Sheet

## KS-540LV

### Soft Feel UV Coating



#### Product Description

KS-540LV is a matte UV curable coating for application in-line over UV litho, UV flexo and aqueous flexo ink systems where a soft feel effect is desired. Typical applications include commercial sheetfed and flexo printing on paper or paperboard substrates. For additional information, contact your KUSTOM SERVICES, INC. representative.

#### Performance Characteristics

- Soft Feel & Matte Gloss (9+ BCM Anilox with ¾+ inch lines to/from coating unit to achieve desired feel)
- Tougher film formation for faster presses
- Low thixotropy
- MAY BE crosslinked to improve chemical resistance<sup>1</sup>
- MAY BE imprintable, foil-stampable, glueable, etc., but proper testing is recommended

#### Physical Properties

- Viscosity 18 - 22 sec. #3 Zahn
- Specific Gravity 1.02
- VOC <1% (after cure)

#### End Use Considerations

<sup>1</sup>KS-540LV does NOT contain a crosslinker which would limit its normal 6 month life. The addition of crosslinking materials can increase rub resistance but should be added press side. Since the use of crosslinker limits the pot life of the material to hours, it is NOT possible to return material for any reason once crosslinker is added and voids all warranties. Care should be used when using crosslinkers to limit the amount of wasted material.

KS-540LV should be evaluated under production conditions using actual ink system and substrate to ensure leveling, intercoat adhesion, gloss and other performance characteristics are acceptable. In general, UV coatings may not exhibit complete intercoat adhesion over some substrates and a primer may be considered.

#### Storage and Handling Information

KS-540LV is a unique UV curing product that is NOT generally compatible with epoxy acrylate based UV coatings. As a result, extra caution should be paid to flush and clean the coating unit before and after its use to make sure there is no cross contamination. Due to the unique nature of KS-540LV, not all normal UV press washes will clean it well. Kustom Group recommends its KS-718 for this purpose. If you choose a different wash up material, it should be checked to see how well it works with KS-540LV before trying generally.

Care should be taken not to expose radiation curable products to temperatures exceeding 100°F for prolonged periods of time or to direct sunlight. Storage must be in a cool, well-ventilated and dry area or uncontrollable polymerization of the product may occur. Do not store this material under an oxygen-free atmosphere. This material should not be stored for more than six (6) months.

Certain precautions should be taken when handling this product. This product contains materials that may cause moderate skin injury (reddening and swelling) and/or sensitization. Please refer to the Material Safety Data Sheet (MSDS) prior to handling for further details.

#### **FOR YOUR PROTECTION:**

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DATE REVISED: 01/17/2016

# Technical Data Sheet

## KS-830

### 100% UV Soft Feel Coating



#### Product Description

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KS-830 is recommended for use as a UV curable tactile coating to be applied in-line over UV litho, UV flexo and aqueous flexo ink systems where a soft feel is desired. Typical applications include covers, folding cartons and non-porous labels. For additional information regarding assistance and applications, please contact your KUSTOM SERVICES, INC. representative.

#### Performance Characteristics

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- Matte gloss
- Low thixotropy
- Excellent cure response
- MAY BE imprintable, foil-stampable, glueable, etc., but proper testing is recommended

#### Physical Properties

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- Viscosity 27 - 32 sec. #3 Zahn
- Specific Gravity 1.07
- VOC <1%

#### End Use Considerations

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KS-830 should be evaluated under production conditions using the actual ink system and substrate to ensure that leveling, intercoat adhesion, gloss and other performance characteristics are acceptable. In general, UV coatings may not exhibit complete intercoat adhesion over some substrates. A primer may be considered for use if this property needs to be improved.

#### Storage and Handling Information

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Care should be taken not to expose radiation curable products to temperatures exceeding 100°F for prolonged periods of time or to direct sunlight. Storage must be in a cool, shaded, well-ventilated and dry area. To do otherwise might cause uncontrollable polymerization of the product with generation of heat. Do not store this material under an oxygen-free atmosphere. This material should not be stored for more than six (6) months.

Certain precautions should be taken when handling this product. Please refer to the Material Safety Data Sheet (MSDS) for further details. This product contains materials that may cause moderate skin injury (reddening and swelling) and/or sensitization. Since irritation may not occur immediately, contact can go unnoticed. Consult the MSDS for appropriate equipment prior to using this or any other materials referred to in this Technical Data Sheet.

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DATE REVISED: 08/12/2015