Rutland Plastic Technologies, Inc.

DCC Dhaval Colour Chem Pvt. Ltd.

Rutland-DCC Pvt. Ltd.

Rutland - DCC Ink Manufacturing Private Ltd.,

Manufactured in partnership with Creative Industries Ltd. , Mumbai , **India**

Technical Data Sheet #341
Date 11/16/2011

High Solids Acrylic WB Rubber Inks

HS-A High Solids Acrylic WB Rubber inks do not contain rubber, rather have a rubber feel after cured

HS-A Whites, Bases, Specialty Inks, Modifiers and Additives

Application

Rutland's newest addition to our environmental friendly screen printing ink line, the HS-A (High Solids Acrylic WB Rubber) inks are suitable for printing with very good opacity and brilliant colors while keeping a supple hand when printing on dark 100% Cotton or 100% Polyester garments. This durable ink prints wet-on-wet and has extremely good stretch. Everything from Opaque White, Flock, Foil, and Glitter adhesives, to Foil release are available in this Non-PVC, Non-Phthalate, Non-Formaldehyde, Non-Lead ink mixing system.

Products Available

EW0022 HS-A Open Time Extender - When printing in low humidity conditions EW0022 can be added to HS-A mixtures at up to 5% to increase open time on the press. Note: More open time means slower flash time but the Extender will allow the printer to find the proper balance for the climate conditions of which he is printing.

EW0031 HS-A SpandeSol Clear Base - Use as a stretch under print base, usually with a 1 point trap in the artwork to prevent the ink colors from penetrating the fabric. IT can also be added to HS-A mixtures for improved stretch. Please note that adding EW0031 to mixed colors or white inks will reduce the opacity of the ink. **Mesh counts for HS-A SpandeSol Clear Base are 110 to 230 mc. in (34 to 90 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW0055 HS-A Puff Additive - Add to HS-A Colors to make a PVC free puff. Add 15% EW0055 to HS-A Colors or White . **Mesh counts for HS-A Puff mixture is 43 mc. in (17 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing**

EW0921 HS-A Reducer - Acts like a lubricant to keep the inks flowing and provides softer hand . Add 5% to any of the HS-A whites or color mixes for easier printing.

EW0923 HS-A Aqua Thickener - Used at 0.5 to 1.0 % to increase the viscosity of HS-A inks and bases. Higher viscosity inks will print with more opacity but the trade off is more cure time is needed to evaporate the excess water in the thicker film of product.

EW0927 HS-A Clear Base - Used as an extender base and can be printed as first down clear, usually with a 1 point trap in the artwork to prevent the ink colors from penetrating the fabric. It has good for fiber matte down providing a smooth print. **Mesh counts for HS-A Clear Base are 140 to 230 mc. in (55 to 90 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

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Products Continued

EW0928 HS-A Flock Adhesive Base - Used as a printing base for applying flock fibers. **Mesh counts for HS-A Flock Base are 86 to 110 mc. in (34 to 43 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW0929 HS-A Foil Adhesive Base - Used as a printing base for applying Foil to certain areas of the print. Print colored foil adhesive in areas of the design of which foil will need to adhere. Cure as normal. Transfer at 350° F. (177° C.) at medium pressure for 5 - 10 seconds. **Mesh counts for HS-A Foil Adhesive Base are 86 to 110 mc. in (34 to 43 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW0930 HS-A Glitter Adhesive Base - Used as a printing base for applying metallic glitter flakes. Mix up to 15% glitter flake to make a glitter ink **Mesh counts for HS-A Glitter Adhesive Base are 86 to 110 mc. in (34 to 43 mc. cm.) or are dependent on the size of the glitter flake mixed into the base. Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW0942 HS-A Foil Release Clear - A clear base to print in areas of the design where foil is not desired. Areas of the design that are to have foil would be printed with EW0929 HS-A Foil Adhesive Base. **Mesh counts for HS-A Clear Base are 140 to 230 mc. in (55 to 90 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW0999 HS-A Barrier Grey - First down under base for printing on to 100% polyester to lower the possibility of dye migration. It is normally over printed with standard HS-A colorants or with 2 layers of EW9704 Soft White. NOTE: Poorly dyed polyester or too much heat in the curing process can overcome any low bleed inks ability to block dye migration. For severe migration use EW0999 as an underlay. Printers should always test the ink on their fabric under their process conditions before printing production runs. **Mesh counts for HS-A Barrier Grey are 86 to 110 mc. in (34 to 43 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW8931 HS-A RFU Black- Used as a stand-alone black ink. **Mesh counts for HS-A Black RFU are 140 to 230 mc. in (55 to 90 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.**

EW9704 HS-A Soft White - An opaque, soft white ink to print on cotton fabrics or over HS-A Barrier Grey underlay on 100% polyester. HS-A Soft White can be printed directly onto 100% cotton. The H2 Soft White provides super soft hand and matte finish. **Mesh counts for HS-A Soft White RFU are 86 to 110 mc. in (34 to 43 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing**

EW9969 HS-A H2 HO White - The most opaque white ink to print on cotton fabrics or over the HS-A Barrier Grey underlay on 100% polyester. HS-A H2 HO White can be printed directly onto 100% cotton. The H2 HO White provides a matte finish. **Mesh counts for HS-A H2 HO White RFU are 86 to 110 mc. in (34 to 43 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing**

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Products Continued

HS-A Mixing Colorants

Use HS-A mixing colorants to mix thousands of colors. Formulated colors can be printed directly onto 100% cotton or over an appropriate underlay for dark fabrics and polyesters. NOTE: Poorly dyed polyester or too much heat in the curing process can overcome any low bleed inks ability to block dye migration. For severe migration use EW0999 HS-A Barrier Grey as an underlay. Printers should always test the ink on their fabric under their process conditions before printing production runs.

Formulations are available at www.rutlandinc.com in the Online Mixing Calculator. Rutland's M3 mixing formulas are great as a starting formula. (Because of HS-A's matte finish and chemistry differences from a plastisol, some formulas may need to be adjusted. Formulas will appear more saturated if used directly onto white fabric. We recommend using a white underlay, even on white fabric for color consistency and better print film stretch)

Mesh counts for HS-A Mixing Colorants are 140 to 230 mc. in (55 to 90 mc. cm.) Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.

Colorants available:

EW1018	HS-A FF FLUOR MAGENTA
EW1038	HS-A FF FLUOR VIOLET
EW1440	HS-A MIXING VIOLET
EW2441	HS-A MIXING BLUE #1
EW2442	HS-A MIXING BLUE #2
EW2443	HS-A MIXING MARINE
EW3443	HS-A MIXING GREEN
EW4042	HS-A FF FLUOR LEMON
EW4449	HS-A MIXING YELLOW
EW6057	HS-A FF FLUOR RED
EW6446	HS-A MIXING SCARLET
EW6447	HS-A MIXING RED
EW8394	HS-A MIXING BLACK
EW9256	HS-A MIXING WHITE

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General Technical Specifications

Wet Ink Tack - HS-A Whites and Bases are slightly tacky in the wet ink form. Printability is greatly improved by the addition of HS-A Reducer at up to 5%.

Printability - HS-A inks have excellent print qualities. Normally easy to clear mesh with one print pass. The White inks flash dry in about 4 seconds to give a solid base of which to print colors.

Cure - Recommended Cure temperature is 320° F. (160° C.) for 90 to 180 seconds depending on garment weight and humidity at time of printing.

Storage - 65°F to 100°F (18 to 35ºC). Avoid direct sun. **Keep lid tightly closed on the container at all times.**

Special Recommendations - HS-A bases, modifiers and additives should be mixed in clean vessels using clean mixer blades and utensils. Any contamination from other ink sources or non approved additives could make HS-A products test positive for the restricted chemicals.

Printing Recommendations

HS-A inks print better with relative humidity above 25%. HS-A High Solids WB inks require screens to be made with a water resistant emulsion. One must use a water resistant pallet adhesive as well.

A flash cure unit with lots of air movement is best. Pre-heat the print pallets before starting the print run. The hot boards and hot air flash assist in removing the water out of the ink prior to going through the dryer, allowing the dryer to complete the process.
The key is a Flash Unit with air flow which creates a lot of hot air. With this technique HS-A whites will flash in about 4 seconds and a proper cure will be achieved when printing on top of an under base. The over all look and feel is softer and more rubbery than a plastisol print.

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Storage

Stable for up to 12 months if stored below 100 degrees F. (65 degrees C.) in a **closed container**.

With this technology, evaporation can lead to destabilization of final ink formulation. After opening the container, one must add a small quantity (50-100gm) of water and seal it tightly to avoid evaporation and avoid drying of upper surface.

Disposal

Disposal Method: This material is not hazardous waste in dry form according to TCLP results (EPA method 1311). If the material is in a liquid form, heat it until solid or simply allow the water to evaporate.

Dispose of the dried material in a safe manner in accordance with federal, state, and local regulations. Do not dispose of by means of sinks, drains, or in the immediate environment.

Empty drums should be completely drained, properly sealed, and returned to a drum re-conditioner. Drill a hole in the bottom of empty pails to prevent drowning of small children.

Disclaimer:

Compliance Info:

√ Non-phthalate (<0.10 % DEHP, DBP, BBP, DINP and DNOP)

√ Formulated to comply with CPSIA 2008 (Consumer Product Safety Improvement Act)
- √ Section 101, Lead content in Substrates(<300 ppm)
- √ 16CFR, Part 1303 Lead restriction (<90 ppm)

√ Non-PVC

√ Formulated to comply with Oeko-Tex 100 standards and is supported by Eco Passport

√ Certified by GOTS

√ Passes major brands RSL's