

PHARMAFLEX AVALANCHE SIGNATURE WHITE (RPL900706) FLEXOGRAPHIC UV CURABLE WHITE PRINTING INK

A strong, high opacity white formulated specifically for superior trapping capabilities and simulation of rotary screen printing.

Product Overview

PharmaFlex AVALANCHE SIGNATURE White UV Curable Printing Ink consistently exhibits a pleasing blue-shade white color, strong opacity and very good trapping properties. Exceptional flexibility and a sophisticated formulation, providing a cure which is fast *and* deep, allow the printer in many cases to use the Pharmaflex AVALANCHE SIGNATURE White to simulate screen printing.

The surface of PharmaFlex AVALANCHE SIGNATURE White is eminently receptive to overprinting with either UV curable products or water-based inks and coatings. **Avalanche contains no silicone in any quantity at all!** This feature makes it ideal as an opacifying base for bar codes, security features, or process and line printing with pigmented inks.

Safety of our customers is of paramount concern. For this reason, PharmaFlex AVALANCHE SIGNATURE White **does not contain aggressive skin sensitizers.** Virtually all other UV curable inks sold today contain aggressive skin sensitizers. As a bonus the PharmaFlex AVALANCHE SIGNATURE White is free of amines, benzophenone, ITX and other agents known to taint drinking water, beverages, and other consumable products. Therefore, the PharmaFlex AVALANCHE SIGNATURE White is far better suited for indirect pharmaceutical, food and beverage applications than most other flexo or rotary screen inks.

Surface Characteristics

PharmaFlex AVALANCHE SIGNATURE White has been developed specifically for adhesion on a wide range of films and provides superior trapping features. The smooth surface combined with the receptive chemistry makes PharmaFlex AVALANCHE SIGNATURE easy to overprint or re-coat.

This product is ideal for applications where the printer requires a truly opaque white base, yet must print on the surface for additional graphic impact. UV curable or water-based colors trap cleanly with great edge definition and solid centers.

To further improve surface smoothness of the PharmaFlex AVALANCHE SIGNATURE White the printer should compliment this fine chemistry with an optimized printing environment. Doctor blade type, plate type, mounting tape, anilox roll and substrate all play critical roles in attaining ideal surface smoothness.

The PharmaFlex AVALANCHE SIGNATURE WHITE is inherently easy to blade. Compared to most other white UV flexo inks it does not require precise tuning and adjustment of the doctor blade to experience a fine, bladed coating on the anilox roll without backside blade spitting. In general stainless steel doctor blades .008 "thick are best. Single bevel, self-seating rounded tip, or stepped blades with .004"- .006" tips all yield trouble free blading without chatter or spitting.

The marriage between graphic design, plate type and mounting tape is proven over time and well documented. When printing the PharmaFlex AVALANCHE SIGNATURE White with high coverage solids and line copy, one should utilize a hard density (not general purpose or medium density) mounting tape and a soft plate. Plates best for process printing or fine copy will not provide good results, when printing UV flexo opaque whites. With respect to UV flexo opaque whites there is no such thing as a general purpose plate.

The anilox roll is extremely important to achieving ideal opacity with the PharmaFlex AVALANCHE SIGNATURE White. To maximize opacity a line count is best between 120-200 lpi with volume ranging from 9-22 bcm. The configuration should be ceramic, laser engraved, 30⁰ channeled cut. It is best to not have the manufacturer put a high polished or even polished surface on these rolls; request a standard surface finish.

The surface of PharmaFlex AVALANCHE SIGNATURE White may become less receptive with multiple exposures to high dose UV energy or extended storage at elevated temperatures. Material overprinted with PharmaFlex AVALANCHE SIGNATURE White should be properly stored and inventory rotated to ensure satisfactory results.

Do not use defoamers or silicone based flow aids in the PharmaFlex AVALANCHE SIGNATURE White! These materials will dramatically impair the ability of the PharmaFlex AVALANCHE SIGNATURE White to accept any form of marking, imaging, printing or decoration. Clean application areas thoroughly after using other varnishes, inks or coatings, including the pumps, and replacing any hoses with cleaned or new hoses. Do not use spray lubricants at any time in the areas where PharmaFlex AVALANCHE SIGNATURE White is being applied.

Prior to full production use, the PharmaFlex AVALANCHE SIGNATURE White should be thoroughly evaluated using the same printers, imagers, foils or dies that will be used in the actual production environment should this product be used for any variable information marking or down-line decoration. Any tapes, films, toners, foils, inks and ribbons used in conjunction with the PharmaFlex AVALANCHE SIGNATURE White should also be evaluated prior to full production use to ensure conformance to customers' durability and graphic quality expectations.

Curing Properties

When utilizing relatively coarse anilox rolls (180-200 lines per inch) to obtain coating weights around 8 microns (0.32 mils), and curing with one 400 Watts per inch (Wpi) lamp, PharmaFlex AVALANCHE SIGNATURE White will cure well at an approximate press speed of 150 feet per minute (contingent upon proper curing unit maintenance and type of curing system).

To approximate screen printing a heavy deposit of ink is required. At coating weights approaching 10 microns (0.4 mils) attained by using a very coarse anilox roll, the PharmaFlex AVALANCHE SIGNATURE White will still cure with one lamp. Although a 600 Wpi lamp is strongly recommended, a 400 Wpi lamp may be used if web speed is significantly reduced. Please test for sufficient depth of cure prior to any production run.

Degree of cure and coating properties are interrelated. Make certain that the coating is cured well before evaluating adhesion, resistance properties and hardness. Although PharmaFlex AVALANCHE SIGNATURE White is relatively fast curing and exhibits good adhesion to the substrate, maximum chemical resistance, hardness, adhesion and overall coating strength will be attained after a 24 hour post-cure.

***NOTE:** Each UV curing unit should be manually set or programmed to operate at maximum power output, when web speed is 100 fpm or greater, regardless of settings for other inks or coatings.*

Adhesion Properties

PharmaFlex AVALANCHE SIGNATURE White adheres to a wide range of materials. This product can be used on most film, metallized paper and metallized board substrates. Acetate, styrene or vinyl materials in particular should be thoroughly tested for compatibility with PharmaFlex AVALANCHE SIGNATURE White or any UV curable product before production use.

Again, prior to utilizing the PharmaFlex AVALANCHE SIGNATURE White, test for compatibility with the substrate, inks, adhesives and glues that may be overprinted by the PharmaFlex AVALANCHE SIGNATURE White or overprinted atop this product. In rare cases UV inks interact with printing inks or other materials to produce a faded/altered color or other unacceptable results.

Properties and Technical Specifications

PharmaFlex AVALANCHE SIGNATURE White forms a tough, flexible ink film resistant to most household cleaning products and petroleum based products including those used for automotive purposes.

Use PharmaFlex AVALANCHE SIGNATURE White for applications where extreme flexibility is demanded and where no edge lift or label curl is tolerated. Although PharmaFlex AVALANCHE SIGNATURE White is fast curing, it is resilient and will die-cut on a tight radius, fold, score or perf without chipping, cracking, or crazing when thoroughly cured.

All samples were prepared using a 200 (7.0 bcm, 45°) ceramic laser engraved anilox roll, a curing system with an elliptical reflector operating at 400 Watts per inch, a press speed of 140 fpm, and printed on BOPP.

Centipoise Viscosity (Brookfield DV-2, #4 spindle, 50 rpm):	500
Weight per Gallon (lbs.):	13.0
Draize Skin Score Max. Single ingredient score):	2.6
60° Gloss:	75.0

Abrasion Resistance Sutherland cycles, 4 lb. weight):	>75.0
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Water Resistance (Hrs. of direct water contact before permeation):	8.0
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Effective: 15 January 2010

All reported results have been obtained in controlled production environments, therefore, ACTEGA WIT, Inc. recommends thorough testing at the actual printing facility prior to any production run. The specific printing and curing conditions are provided merely as reference information; variations in ink deposit and/or curing power will affect results. Inks recommended by ACTEGA WIT, Inc., when properly cured, must conform to all performance requirements of the finished product in the end-use environment to ensure customer satisfaction. The preceding recommendations are presented for a specific application after careful review of the available information. Due to the inability of ACTEGA WIT, Inc., Inc. to anticipate or control conditions whereby products (and information relating thereto) will be employed, ACTEGA WIT, Inc. cannot guarantee desired results will always be obtained with ACTEGA WIT, Inc.' products. Ink and coating products should be tested, as stated above, by our customers to determine fitness-for-use, as defined by their internal criteria. Each substrate and application for which the ACTEGA WIT, Inc. products are targeted should be evaluated. ACTEGA WIT, Inc., Inc. hereby disclaims responsibility for claims and damages beyond the replacement cost of any defective product. Products are sold without additional warranties expressed or implied.