Classic Colours Ltd Nevada Classicure LA (Label Application) inks

UV waterless products – April 2023

Pure EPDM Rollers and Blankets required
Minimum order quantity for these products = the container size
** Denotes inks used in Codimag 7 colour system**
Commodity / Tariff codes 3215 110000 for black, 3215 190090 for all other colours

PROCESS INKS (2.5 Kilo tins)		
NEVADA CLASSICURE LA YELLOW	PY8973	**
NEVADA CLASSICURE LA MAGENTA	PR8974	**
NEVADA CLASSICURE LA CYAN	PB8975	**
NEVADA CLASSICURE LA BLACK	PN8976	
NEVADA CLASSICURE LA DENSE BLACK	PN9008	**
LA BASIC COLOURS (1 Kilo pots)		
NEVADA CLASSICURE YELLOW	MS7400	
NEVADA CLASSICURE WARM RED	MS7401	
NEVADA CLASSICURE RUBINE	MS7402	
NEVADA UniVersal-LM LA LF RESIST RHODAMINE	MS10817-LM	
NEVADA UniVersal-LM LA LF RESIST PURPLE	MS10818-LM	
NEVADA CLASSICURE VIOLET	MS7405	
NEVADA CLASSICURE REFLEX	MS7406	
NEVADA CLASSICURE PROCESS BLUE	MS7407	
NEVADA CLASSICURE GREEN	MS7408	**
NEVADA CLASSICURE BLACK	MS7409	
NEVADA CLASSICURE TRANS WHITE	MS7410	
NEVADA CLASSICURE 012 YELLOW	MS7411	
NEVADA CLASSICURE 021 ORANGE	MS7412	
NEVADA CLASSICURE 032 RED	MS7413	
NEVADA CLASSICURE 072 BLUE	MS7414	
NEVADA CLASSICURE LA 165 ORANGE	MS9465	**
NEVADA CLASSICURE LA VIOLET 23	MS9461	**
LA BASIC LF + RESISTANT COLOURS (1 kilo pots)		
NEVADA CLASSICURE LA LF + RESIST WARM RED	MS9669	
NEVADA CLASSICURE LA LF + RESIST RUBINE	MS10691	
NEVADA CLASSICURE LA LF + RESIST VIOLET	MS10475	
NEVADA CLASSICURE LA LF + RESIST REFLEX	MS10476	
NEVADA CLASSICURE LA LF + RESIST 072 BLUE	MS10484	
OPAQUE WHITES (1.5 Kilo tins)		
NEVADA CLASSICURE OPAQUE WHITE	MS6545	
CLASSICURE DRY OFFSET OPAQUE WHITE	MS9074	

GOLDS & SILVERS

STANDARD SERIES	450gram	550gram
NEVADA CLASSICURE GOLDS		
Rich Paste and Varnish	MP8940	MV8940
Copper Paste and Varnish	MP8947	MV8947
NEVADA CLASSICURE SILVER (1 Kilo tins)	MM8077	

NEVADA UniVersal GOLDS	500gram	500gram
Rich Paste and Varnish	P1000 + V3000= 1kg Rich gold ink	
Copper Paste and Varnish	P2000 + V4000 = 1kg Copper ink	
NEVADA UniVersal SILVER	MM10699	

PRIMERS

CLASSICURE UNIVERSAL PRIMER	MV10220
CLASSICURE WET/DRY PRIMER	MV10536

LABEL APPLICATION TECHNICAL INFORMATION

FOIL BLOCKING/STAMPING - THERMAL RIBBON OVERPRINTING – THERMAL PAPER

Special wax free inks are normally required. This series is specially formulated for Semi Rotary label presses, including machines with Anilox inking. They accept foil stampable UV lacquers and hence are suitable for use with most foil stamping products.

Thermal Ribbon overprinting: There are 3 types of thermal ribbon, namely WAX, WAX/RESIN and RESIN. **RESIN ribbons** should be specified. Overprint Trials should be made to evaluate the suitability of ribbons from various sources; this should also include Overprinting of labels that have been stored for some time.

Thermal papers: Our laboratory tests indicate that Nevada Classicure LA inks accept thermal imaging for several months after printing. However as there are many types of Thermal paper available we have not been able to extend our testing to all grades. Therefore we advise customers to make their own tests under actual production conditions, with the particular thermal substrate that is to be used. The general advice from thermal paper manufacturers is not to print in areas that are to be subsequently thermally imaged.

CODIMAG 7 COLOUR LABEL PRINTING SYSTEM

In cooperation with Codimag and Esko we have produced a 7 colour process set that enables the user to match the vast majority of Pantone® spot colours. Printing with 7 colours instead of 4 also facilitates the production of Hi-Fi images, similar to High Definition video images. Please contact us for further information on the special inks developed for this system.

NEVADA CLASSICURE BASIC COLOUR RANGE

Our unique waterless offset UV curing formulations are available in Basic Colour Ranges. New stabilising compounds enable us to use pigments that were previously unsuitable in UV curing inks. Although this provides the means to match far more accurately to the industry standard, certain colours may not be to the approved colour strength. This has always been the case with UV curing inks.

OPAQUE WHITES

Nevada Classicure Opaque White should be used where foil blocking is to be applied, or for subsequent application of bar codes after interdeck curing**. Sahara Classicure Opaque White** is not suitable for foil blocking or thermal transfer ribbon overprinting. The Sahara White has the best scratch resistance. Both products have similar whiteness and maximum opacity. Classicure Dry Offset Opaque White is specially for backing lenticular work etc. all over from a dry plate, stripped blanket, or relief plate. It is not a waterless product.

NEVADA UniVersal TWO COMPONENT GOLDS

Although it is possible to make a ready mixed gold formulation for waterless printing the limited shelf life does not make the product commercially viable. A recent addition is our UniVersal Gold it is a two component Paste/Varnish formulation that can used for waterless printing suitable for both Hg and LED-UV lamps. We offer a Rich and Copper shade only. These two products can be easily mixed to obtain any shade of offset gold. Our laboratory tests indicate that once mixed the ink remains stable for several days. Please ask for a separate information sheet which gives recipes for all popular shades of gold.

GENERAL TECHNICAL INFORMATION

ENVIRONMENT

All Sahara Classicure UV inks are 100% non-volatile. They have zero VOC content. It is not possible to formulate UV curing inks on vegetable oils (e.g. Soy based). Wherever possible our raw materials have been carefully selected for low odour, taint, and migration properties. All materials have an extremely low skin irritancy index.

PRINTING MACHINES

There is a Sahara or Nevada Classicure ink that is suitable for use on all types of sheetfed and web rotary and semi rotary offset printing machines fitted with suitable temperature control and curing equipment.

SUBSTRATES (paper and board)

Our latest Sahara Classicure PS formulation is currently being printed on all types of paper and board without picking problems previously associated with waterless UV inks. This applies to all types of presses, including machines with anilox inking systems. With the right curing system (extended delivery, with IR hot/cold air prior to curing) our unique formulation will cure with a very high gloss level on most coated papers and boards.

SUBSTRATES (plastic)

Suitability for a particular plastic should be determined by trial before commercial work is produced. On certain plastic materials a primer will be required. We recommend a dyne reading of at least 42 or higher if primer is to be avoided. To obtain maximum scratch resistance UV curing lacquer or varnish should be applied to protect the print. The adhesion of our inks to plastic materials will depend on the type ink, the type of plastic, the degree of corona treatment, the type of primer if used, and or the type and method of sealer coating. A high dyne reading does not necessarily indicate that good adhesion or ink transfer will result.

NB Some plastic materials have a surface energy (wetability) that is similar to the silicone non image area of a waterless printing plate. It is essential that all waterless inks refuse to transfer to the silicone non image areas of a waterless plate, therefore waterless inks will not transfer well to plastic substrates with poor ink receptivity. However we have recently developed a UV curable UNIVERSAL primer that will transfer well to many plastic substrates that exhibit poor ink receptivity. See CLASSICURE UNIVERSAL PRIMER MV10220. Wet litho UV curing inks are normally much lower in viscosity than waterless and for this reason will transfer more readily to substrates that exhibit poor receptivity for waterless inks. For this reason with wet offset inks, if transfer and adhesion are acceptable, the substrate should not require a primer.

ADHESION AND SCRATCH RESISTANCE

Adhesion of inks to plastic materials is normally tested by making Scotch Tape pulls after the print is fully cured. The fact that the print resists the Scotch Tape test does not necessarily mean that it is very scratch resistant. In many cases print that **does** perform well with Scotch Tape can be very easily scratched with the fingernail.
Also it does not necessarily follow that inks that exhibit good scratch resistance will pass the Scotch Tape test. In certain cases to achieve the best of both worlds it will be necessary to prime the plastic and subsequently coat or laminate the print.
Our Sahara Classicure PC formulation gives the best combination of good Scotch tape resist and high scratch resistance.

PLATE TEMPERATURE
The plate temperature will depend on the design of the press. Assuming that all other conditions such as roller settings, ink film thickness, press speed, ambient temperature, etc. are set to an optimum level, suggested **plate** temperatures for various press types are as follows:- Kammann CD press - 15-17c, KBA Gravuflow anilox inking presses - 16-22c, Codimag Viva 340 and 420 anilox machines - 20-22c and for standard offset presses with 3-4 plate inkers - 20-27c depending on press make and model. It is very beneficial to establish the best plate temperature for each individual machine and each ink. This will normally be 2-3 degrees centigrade below the point at which toning is evident.

ODOUR and TAINT
The odour level of the uncured ink is very low. Immediately after curing some slight odour is produced. The fully cured film is practically odourless. Odour and Taint tests performed on chocolate gave very good results with our Sahara Classicure PS formulation.

FOOD PACKAGING and MIGRATION
The production of the printed package and the food type be packed into it is beyond our control. To quote from the EuPIA statement regarding photoinitiators and migration: - "The final measure of migration compliance is the responsibility of the printer in line with recognised convertor's good manufacturing practices, and the end user". Please contact us for the latest information regarding our "UniVersal-LM ink formulations". The photoinitiators used in these inks are deemed undetectable by approved analytical methods for migration of substances to food from the non-contact side of food packaging.

BLANKET AND ROLLER WASHES
Most proprietary UV only washes are suitable. We are informed by Bottcher that their Bottcherin UV offset wash is suitable for use on their Dual Purpose 471 and UV only 724 compounds. Many of our existing customers prefer this product. **Do not use Hybrid washes.** Ensure that the roller, blanket, and press manufacturers have approved the chosen wash for their particular roller compounds and/or automatic wash systems. If the wash is slow to evaporate, toning is likely to occur on start-up. Anilox inking systems can return residues of slow evaporating wash solvents back up to the ink chamber. This results in complete ink system contamination. Toning will continue to occur unless the whole system is washed up and dried, and the ink in the chamber is replaced. THIS IS ONE OF THE MOST COMMON CAUSES OF TONING. Do not allow the blanket or roller wash to come into contact with the plates.
Residues left in the rollers may damage some plates and also cause toning. If you wish to print immediately after a roller wash, to minimise the risk of toning make a final manual application of Isopropanol or Toray PC Neutral. Ensure that as soon as the wash has evaporated the wash blades are pulled away from the rollers. Wipe the blankets manually with Isopropanol or Toray PC Neutral and ensure they are completely dry before start-up.
With suitable rollers and blankets an overnight wash-up can be avoided, allowing extra time for production.

ROLLERS & BLANKETS
All "rubber" rollers should be made from EPDM. This compound varies in compatibility depending on the manufacturer and shore hardness. We have tested compounds from several manufacturers. The best ones tested to date can be obtained from Bottcher or Westland. Most EPDM (UV only) blankets are suitable. **Do not use standard rubber or dual purpose rollers or blankets.** Please enquire for further information on blanket grades.

PLATE WASH
It is rarely necessary to wash the plates. If required Isopropanol or Toray PC Neutral can be used or a wash recommended by the plate supplier. Always ensure that a very soft cloth is used and soak it well to give good lubrication.

CURE SPEED
This will obviously depend on the number and power of the lamps, the press speed, ink film thickness, etc. We have found that two or three lamps running at 120 watts/cm. are sufficient for most applications.

H-UV

The "H-UV" system was first promoted by Komori. Since then many press manufacturers have developed similar UV curing systems. As far as we are aware the basic differences between "H-UV" and "normal" UV curing is a change in the lamp type and a specially formulated ink. Iron/Gallium doped ozone free UV lamps are used in place of lamps that produce ozone. Ozone is produced in the UV-C wavelength band. Iron/Gallium doped lamps have lower emissions in the UV-C band and higher emissions over the UV-B and UV-A bands. Any output in the ozone producing wavelength areas is blocked by a special quality quartz glass. Special wet offset UV ink formulations which contain higher cost, more reactive/effective oligomers, and photoinitiators are specified for H-UV curing systems.

LED-UV

Curing with LED-UV lamps is now fairly well advanced and there are many commercial installations world-wide. We believe that Classic Colours were the first ink company to supply the first LED-UV waterless press in Europe. Unlike normal Mercury or Iron/Gallium doped UV lamps most LED UV lamps emit UV radiation in a very narrow UV-A waveband, usually 385 or 395 nanometres. There are also lamps that emit UV at 365 nanometres. Until quite recently the main commercial use of LED-UV systems has been on wide format digital UV ink-jet machines, the main reason for this success being that these machines run at very slow speeds. Due to the narrow waveband there is a very limited choice of photoinitiators. Some of the most effective types are not deemed suitable for use in food packaging inks. **We have developed a complete range of LED-UV curable inks that mirror our well established standard waterless Mercury curing UV formulations.**
For food packaging please enquire about our UniVersal –LM inks.
We also offer LED-UV wet offset inks. The range consists of Process colours, Basic colours, 2 pack Golds, Silver, Hybrid Fluorescents, Opaque Whites, Primers and Varnishes.

PRESS STABILITY

Tests with Bottcher and Westland EPDM rollers show only one unit increase in tack level after 4 hours of running without ink replenishment (i.e. a tack increase from 23 to 24 units when using a Betta Tech Tackmeter with 1cc of ink at 25C. If ink tacks up on the press check the quality and type of rollers and blankets. Ensure no stray or reflected UV light reaches any part of the printing units. Printing units should be shielded from ambient UV light from skylights and fluorescent lighting. This is particularly important when using Opaque White, Varnishes, Primers, and Lacquers.
Shielding from ambient UV light is very important if LED-UV inks and lamps are used.

TONING

Our laboratory toning tests indicate that our Sahara Classicure inks have maximum resistance to toning. Nevada inks are low silicone and may require lower plate temperatures. If toning occurs the main reasons will be:- 1. The temperature of the plate is too high. 2. The ink is too low in viscosity/tack, or badly formulated. 3. A residue from the roller/blanket wash has contaminated the ink. 4. The ink film thickness is too high. 5. The press speed is too slow. 6. The inker roller to plate setting is incorrect. 7. There is end float in the plate inker bearings or cages, or the plate inkers are oscillating. 8. The non-image area of the plate is worn.

MISTING SPRAYING OR INK FLY

All our UV ink formulations contain anti misting additives.

COLOUR STANDARDS and GAMUT

All three process colours meet the European process colour standard. A process series with a larger colour gamut can be supplied on request. Some pigments used to obtain a larger colour gamut may not be suitable for lamination involving overlay film for plastic card production.

TRANSPARENCY

For a many years the choice of pigments for UV curing inks was restricted to types that did not affect the shelf life. Inks based on these pigments were sometimes semi opaque, causing muddy results in process work compared to conventional inks.
The use of new UV stabilisers has enabled us to formulate all process colours with exceptional transparency.

DUCT AGITATION

Our unique formulations ensure that wherever possible inks have good flow properties. Our Sahara Classicure PS and Nevada Classicure LA process colours do not usually require ink duct agitators. Duct agitation may be required for certain Nevada and Sahara PC inks.

SHELF LIFE

As long as the inks are stored in the containers provided, with lids firmly secured at all times, we envisage storage times of at least 12 months for all inks, however we do not offer any warranty after 6 months. Temperatures should not be excessive at any time. We recommend storage at between 15 & 20c. For indeterminate reasons the shelf life of some batches of certain UV formulations can be quite short. For this reason we are unable to offer any shelf life warranty for ready mixed Silver inks, or Hybrid fluorescent colours. There may be very rare occasions when shelf life of these products is short, however we would predict that in most cases 6 months could be expected.

ABREVIATIONS

PS =Press Stable
CMS = Classic Matching System
LA = Label
PC = Plastic Card
LF = Light Fast
UV = Ultra Violet
BW = Blue Wool

EPDM = Ethylene Propylene Diene Methylene terpolymer.
SAHARA™ = Waterless inks that contain silicone fluid.
NEVADA = Waterless inks that contain low/zero silicone.
CLASSICURE™ Classic Colours UV curing inks/varnishes.
EuPIA = European Printing Ink Association
IR = Infra Red

L. a. b. **L**. = Lightness (Black 0 White 100) **a**. = Redness – Greenness **b**. = Yellowness - Blueness

Find us at www.classiccolours.org.uk

The above information is based on our laboratory tests and experience with waterless inks and printing. However, this shall not constitute a guarantee for any specific product and shall not establish a legally valid contractual relationship.

All previous versions of this PC inks & TDS info are obsolete and are replaced by this version dated April 2023