Technical Data Sheet – Version: December 2015

UV LUX

UV Curable Ink System for Carton, Luxury Packaging and Narrow Web Applications

Product Code	Product Name
GSEX90111221	INTENSE PROCESS BLACK UV LUX
GSEX90111222	INTENSE PROCESS CYAN UV LUX
GSEX 90111226	INTENSE PROCESS YELLOW UV LUX
GSEX 90111228	INTENSE PROCESS MAGENTA UV LUX

Product Code	Product Name
UVEX90111211	PANTONE YELLOW 012 UV
UVEX90111219	ORANGE 021 UV
UVEX90111234	WARM RED UV
UVEX90111237	RED 032 UV
UVEX91010427	RHODAMINE RED UV
UVEX90111264	PURPLE UV
UVEX90111274	REFLEX BLUE UV
UVEX90111272	BLUE 072 UV
UVEX90111276	GREEN UV
UVEX90111266	RESISTANT VIOLET UV
UVEX90111270	RESISTANT PINK UV
UVEX90111275	RESIST. REFLEX BLUE UV
UVEX90111262	UNTONED BLACK UV
UVEX90111280	OPAQUE WHITE UV
UVEX90111256	TRANSPARENT WHITE UV

For more information on other commercial products consult the technical department.

1. Description

UV LUX is a highly versatile range of UV curable lithographic inks designed for outer surface printing of carton board and foil boards, selected plastics and non-absorbent substrates. UV LUX is also designed for the printing of labels, sleeves, tags and tickets.

Avenida de las Palmeras, 18 Nave 18E – 28350 Ciempozuelos (Madrid)
info@cmykinnova.com – www.cmykinnova.com

2. Product features

- Sheetfed or web offset printable
- Extensive colour range, including resistant colours
- Adhesion to a wide range of paper, board and synthetic substrates
- Excellent dot gain and trapping properties for high print quality, including reversed out print
- Suitable for in-line or off-line coating, foil stamping and lamination
- Manufactured only from substances listed in Annexes 1 and 6 of the Swiss Packaging Inks Ordinance*
- Formulated according to material selection guidelines for the printing of packaging for Nestlé**
- Formulated without the use of benzophenone, 4-methyl benzophenone, 4hydroxybenzophenone and isopropyl thioxanthone (ITX) but is NOT a low migration product
- Formulated without the use of Bisphenol A or materials based on Bisphenol A.

3. Product Suitability

3.1 Applications

UV LUX inks are intended for use in the following areas:

Paper and carton board, non-food packaging o Luxury packaging, such as liquor or cosmetic cartons o Plastic packaging, on appropriately selected substrates o Paper and top coated plastic self-adhesive labels o Appropriately selected sleeve plastics, including shrinkable plastics o Primary outer wrap packaging for food, subject to specific conditions of use*** UV LUX inks are not suitable for use in the following areas:

Primary packaging for food, where the packaged goods are in direct contact with the non-printed side of the packaging, e.g. juice or milk cartons o Microwave or ovenable applications o Direct food contact, or where low migration properties are demanded due to pack design or the nature of the packaged goods due to the risk of direct contact.

* Ordinance of the Federal Department of Home Affairs (FDHA) on Materials and Articles (817.023.21) Section b: Packaging Inks (Annex 6 4th edition 1.12.2012) ** Nestlé – “Guidance Note on Packaging Inks” version 02-2014 *** ONLY where the packaged goods are retained within an absolute or functional migration barrier OR the printed packaging has been tested in conditions of use and shown to conform to regulatory requirements. Printers should assure themselves that use of these products on food packaging has been fully assessed for risk and the packaging so produced meets end use requirements. Whilst UV LUX inks are versatile in performance, they may not be suitable if used outside the above defined applications. If in doubt, please check suitability with your local Artes Print representative.

3.2 Substrate

UV LUX inks are suitable for use on paper and carton board and a wide range of non-absorbent substrates. Corona treatment is recommended for non-top-coated plastic substrates to ensure

an optimum treatment level of 38-44 mNm-1. Note: there is significant variation between different grades of substrates. The printer should follow specific advice from their substrate manufacturer and make any tests necessary to prove performance under realistic conditions before commencing with commercial printing.

3.3 Print Finishing

UV LUX inks can be coated to improve gloss, physical and chemical resistance properties. A range of UV LUX Coatings is available for use with the inks, to provide a wide variety of finishes, including gloss, satin, matt and special effects. Printed material produced with these inks is suitable for hot and cold-foil stamping, with or without an appropriate coating. Note: there are many types of foil, which require specific application conditions. Testing is recommended to establish optimum foiling conditions before proceeding with commercial printing.

UV LUX printed materials can be successfully laminated in-line or off-line using solventless adhesives, using standard converting processes. Please contact your CMYK INNOVA technical service representative for specific information.

4. Safety, Health and Environment

4.1 Product Handling

UV LUX inks should be used in accordance with normal standards of industrial hygiene and good working practice. Please refer to the UV LUX Safety Data Sheet for specific information.

4.2 Manufacturing and Materials

UV LUX inks are produced using Good Manufacturing Practice and in accordance with the latest EuPIA Guidelines on Printing Inks Applied to the Non-Food Contact Surface of Food Packaging Materials and Articles. (See www.eupia.org for details)

4.3 Storage

UV LUX inks are supplied in 3 kg black plastic buckets. Shelf life for resistant shades is at least two years from date of manufacture, when stored in original unopened containers between 5° and 25°C and protected from direct sunlight. The inks may remain useable for longer periods, but once they have reached this age should be checked before use. Note that inks based on non-resistant pigments may lose colour strength during that period (see section 6) and therefore have a shelf life of 12 months from the date of manufacture. If in doubt, please contact your CMYK INNOVA representative for advice. Inks returned from press that have not been contaminated in any way should be re-used within three months.

4.4 Waste Disposal

Printing inks, coatings and printing residues should be disposed of in accordance with Local, EU and National regulations. Please refer to the product Safety Data Sheet for additional information.

5. Printing Conditions

5.1 Printing Conditions

UV LUX inks are supplied press-ready and should not need adjusting under normal printing conditions. The press and roller system should be thoroughly cleaned to avoid crosscontamination from products used previously or adhesion and cure may be affected.

5.2 Additives

A number of press-side additives are available for adjusting properties in non-standard conditions or applications. As a general principle, use of additives should be a last resort, when process adjustment has not solved particular application issues. Further, the maximum addition level should be respected, to avoid the potential creation of other issues.

5.3 Wash Up

A variety of proprietary wash-up solutions are available which are suitable for use with UV inks and press components, including rollers, blankets and plates.

5.4 Fountain Solutions

Depending on press type and substrate, a number of fountain solution additives are available from CMYK INNOVA for use with these inks, to provide optimum emulsification and printing properties. These inks are usually run with low or no alcohol.

Please contact your Artes Print representative for consumables advice and recommendations.

6. End-Use Safety / Assumptions

Acceptable technical performance of UV LUX inks is dependent on:

- The application of Good Manufacturing Practice
- The press being fitted for UV printing, including suitable rollers, blankets and plates
- Control of film weight and print density
- Adequate curing capacity on-press to ensure that the print is fully cured before conversion
- Appropriate packaging design and structure.

Choice and control of film weight, curing and substrate are printer technical requirements for which CMYK INNOVA cannot accept responsibility. Depending on measuring equipment the process inks are designed to be printed at the following typical print density values. It is strongly recommended these are not exceeded as cure may be impacted and print handling properties compromised.

	ANSI FILTER	DIN 16536
Yellow	0.90-1.10	1.25-1.35
Magenta	1.35-1.45	1.35-1.45
Cyan	1.35-1.45	1.35-1.45
Black	1.70-1.80	1.70-1.80

Important Information

Inks PURPLE, VIOLET, RHODAMINE, BLUE 072 & REFLEX BLUE (see Table) are based on dye complex (fanal-type) pigments and these products are not suitable for use on food packaging. They are also not recommended for printing on plastic or filmic substrates as the pigment may “bleed” into the substrate. Inks of this type have poor resistance properties, especially on non-absorbent substrates such as foil board, so are not recommended for use where good lightfastness, solvent resistance or outdoor resistance properties are required. Due to the non-resistant nature of the pigments, ink colour strength can decrease on extended in-can storage. Care should be exercised when coating print made with “fanal-type” inks as some types of coating, especially those with high amine content, can cause colour shift or “burn-out” of colour. If in doubt, please contact your Artes Print customer technical service representative for advice and product recommendation.

7. Product information

	Product	Lightfastness# Full Strength	Alkali#	Alcohol#
Process Colours	PROCESS YELLOW UV LUX *	5	+	+
	PROCESS YELLOW OPAQUE UV LUX (1ST DOWN OPAQUE)	5	+	+
	PROCESS MAGENTA UV LUX *	5	-	+
	PROCESS CYAN UV LUX *	7	+	+
	PROCESS BLACK UV LUX	7	+	+
	PROCESS MID RESISTANT YELLOW UV	5	+	+
	PROCESS RESISTANT YELLOW UV	7	+	+
	PROCESS MID RESISTANT RED UV	6	+	+
	PROCESS RESISTANT RED UV	7	+	+
Blend Intense colour process	INTENSE PROCESS YELLOW UV	5	+	+
	INTENSE PROCESS MAGENTA UV	5	-	+
	INTENSE PROCESS CYAN UV	7	+	+
	INTENSE PROCESS BLACK UV	7	+	+
Blend Non-Resistant colours	YELLOW 012 UV	5	-	+
	ORANGE UV *	4	+	-
	WARM RED UV *	3	-	+
	RHODAMINE UV *	4	-	-
	PURPLE UV *	4	-	-
	VIOLET UV *	3	-	-
	BLUE 072 UV *	3	-	-
	REFLEX BLUE UV *	3	-	-
Blend resistant colours	GREEN SHADE YELLOW UV	7	+	+
	GREEN UV *	7	+	+
	RED 032 UV *	6	+	+
	TRANSPARENT SCARLET UV	6	+	+
	RESISTANT CARMINE UV	6	+	+
	RESISTANT WARM RED UV	6	+	+
	RESISTANT BLUE SHADE RED UV	6	+	+
	RESISTANT PINK UV	7	+	+
	RESISTANT BLUE 072 UV	7	+	+
	UNTONED BLACK UV *	8	+	+
	RESISTANT VIOLET UV	7	+	+
	RESISTANT REFLEX BLUE UV	7	+	+
Aditional Products	TRANSPARENT WHITE		+	+
	NON-YELLOWING OPAQUE WHITE		+	+
	OPAQUE WHITE **		+	+

Test methods are available on request. Note: the data refers to pigment properties, not those of the cured film. Lightfastness is measured according to Blue Wool Scale. Under wet conditions such as during external exposure lightfastness is significantly worse for certain colours. Resistant colours may differ slightly in shade from the equivalent non-resistant colour.

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*May be used as approximations to the Pantone® color range. Note however that Pantone® guides are produced with conventional oil-based inks on optically brightened paper, so guideline matches may not translate to other substrates and ink systems. Colour blends made using guideline formulations should be checked before going to press and adjusted if required to meet specific conditions of use. Please consult Artes Print technical services for recommendations on alternative shades or blend formulations.

**Is intended for use as a blend colour. On “print friendly” substrates, it may function as a base or backing white. However, White ink specifically designed for those purposes are recommended most applications, please consult Artes Print technical services for recommendations.

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