

Haptone FL

Solvent-based flexographic inks for wraparound labels, shrink sleeves and hygiene packs

High-strength, low-viscosity ECG-ready inks for CI flexo: labels on pearlescent and clear BOPP, shrink sleeves on PVC and PET-G with Nexasleeve White, and hygiene packs on CPP and PE with Medicoat OPV

INK TECHNOLOGY	PRINTING PROCESS	KEY SUBSTRATES	PRIMARY END USE
Solvent-based, nitrocellulose-polyurethane (NC-PU)	CI flexography – ECG (CMYK + O, G, V) and spot colour	BOPP label films; PVC and PET-G shrink film; CPP and PE	Wraparound labels, shrink sleeves, hygiene packs

PRODUCT DESCRIPTION

Haptone FL is a solvent-based, high-strength flexographic ink system developed for Expanded Colour Gamut (ECG) printing of labels on CI flexo presses. A fixed palette of seven process colours – cyan, magenta, yellow and black extended with orange, green and violet – replaces individually matched spot colours, so that brand colours are reproduced through colour management rather than through ink mixing. Haptone FL is designed for the demanding, high-speed label market: pearlescent (cavitated) BOPP labels for beverage bottles, transparent OPP labels for water bottles and white BOPP labels for food and household products.

The inks are formulated at high pigment loading and deliberately low supply viscosity. This allows the target solid density to be reached from fine, low-volume aniloxes (typically 1,000 – 1,200 lpi), which is essential for clean highlight dots, low dot gain and stable tonal reproduction across the seven stations, while press viscosity is reached with only a small addition of reducer, so colour strength is not diluted on press. The NC-PU binder system gives the high gloss, water and condensation resistance, scuff resistance and adhesion required of a surface-printed label that must survive filling lines, ice buckets and retail handling.

Haptone FL is supplied as a complete label range: a matched seven-colour ECG process set, a series of resist and spot colours for conventional work, a high-strength opaque white, a reducing medium, silver and gold metallics and a low-static OPV. The range is completed by Haptone FL Low Static Label OPV, an antistatic gloss overprint varnish that controls static charge and coefficient of friction for trouble-free slitting and roll-fed labelling, and by Haptone FL Silver and Gold metallic inks for premium beverage and spirits labels. Printed with Nexasleeve White, the same colours are used for reverse-printed shrink sleeves on PVC and PET-G film; the high-resist, high-light-fastness grades of the range, protected with Medicoat Gloss High Scuff OPV, are also suitable for surface printing of hygiene packs on CPP and PE. Arctic Materials supports the implementation of ECG with press fingerprinting, characterisation, profile building and on-site colour management training.

KEY FEATURES

- + Seven-colour fixed palette (CMYK + OGV) covering the large majority of the Pantone® solid coated library when printed to the reference conditions in this data sheet
- + High pigment strength – target densities achieved from 1,000 – 1,200 lpi aniloxes at low ink film weight
- + Low supply viscosity – press viscosity reached with minimal reduction, preserving strength and print contrast
- + Excellent print definition: clean minimum dots, low dot gain, sharp reverse text and fine lines
- + High gloss and clean, transparent process colours for vibrant overprints and secondaries
- + Excellent adhesion, water, condensation (ice-water) and scuff resistance on treated pearlescent, white and transparent BOPP
- + Excellent resolubility on fine aniloxes – reduced drying-in on plates and anilox during long runs

- + Consistent, batch-to-batch colour position (ΔE controlled to the master reference), the foundation of any ECG workflow
- + Eliminates spot-colour ink inventory, ink mixing and per-job wash-ups; enables job ganging and shorter changeovers
- + Shrink-sleeve capable: the same colours reverse print on PVC and PET-G shrink film with Nexasleeve White as backing white
- + Hygiene-pack capable: high-resist, high-light-fastness grades for CPP and PE surface printing with Medicoat Gloss High Scuff OPV
- + Available as finished inks or as concentrate plus technology varnish for dispensing systems

PRODUCT SUITABILITY

Applications

Haptone FL is intended for surface printing of roll-fed wraparound and cut-and-stack labels on CI flexo presses: labels for PET and glass beverage bottles (water, carbonated soft drinks, juices), pearlescent BOPP promotional labels, and white BOPP labels for food, home and personal-care containers. The inks are equally suitable for conventional four-colour process work and for spot colours generated from the ECG palette. Two further applications are covered by this data sheet: reverse-printed shrink-sleeve labels on PVC and PET-G film, printed with Nexasleeve White as the backing white, and surface-printed hygiene packs (diaper and feminine-care outer bags and flow-wraps) on CPP and PE film, printed with the high-resist, high-light-fastness grades of the range and protected with Medicoat Gloss High Scuff OPV. Haptone FL must not be used for other end uses without confirmation from the Arctic Materials technical team.

Haptone FL is not suitable for

- + direct food-contact applications;
- + reverse printing for adhesive lamination – a dedicated lamination range is available;
- + shrink sleeves printed with Haptone FL Opaque White (label white) instead of Nexasleeve White – the label white is not formulated to shrink;
- + returnable (multi-trip) bottles subjected to hot caustic washing, unless confirmed by end-use testing;
- + high-temperature applications, including pasteurisation, retort, microwaveable or ovenable packs.

Substrates

Haptone FL is designed primarily for corona-treated biaxially oriented polypropylene label films, and additionally for PVC and PET-G shrink film and for CPP and PE hygiene-pack film. Because ECG relies on a stable colour position, the film surface must be uniform reel to reel: variation in treatment level, slip additive or pearl (cavitation) density changes the ink hold-out and therefore the measured colour.

Substrate	Surface treatment requirement	Remarks
Pearlescent (cavitated) BOPP label film, 35 – 60 μm	≥ 38 dynes/cm; 40 – 42 dynes/cm preferred	Lower stiffness and heat resistance than clear film – moderate dryer temperatures; confirm pearl uniformity
Transparent BOPP / OPP label film	≥ 38 dynes/cm; 40 – 42 dynes/cm preferred	Print opaque white as base where opacity is required; check slip-additive bloom on aged film
White opaque BOPP label film	≥ 38 dynes/cm	Standard label film; excellent gloss and adhesion

Substrate	Surface treatment requirement	Remarks
Metallised BOPP (primed / treated)	Print on treated side	White backing recommended under process colours; pre-test adhesion
PVC shrink film, 40 – 50 µm (sleeves)	≥ 38 dynes/cm; print on treated side (inside of sleeve)	Heat sensitive – low dryer temperature; keep solvent-seam zone unprinted
PET-G shrink film, 40 – 50 µm (sleeves)	≥ 42 dynes/cm; print on treated side (inside of sleeve)	Higher shrink and stiffness than PVC; validate ink at maximum shrink
CPP film, 25 – 40 µm (hygiene packs)	≥ 38 dynes/cm; 40 – 42 preferred, in-line corona	High-resist grades + Medicoat OPV; check heat-seal area
PE / LLDPE film, 30 – 60 µm (hygiene packs)	≥ 38 dynes/cm; 40 – 42 preferred, in-line corona	High-resist grades + Medicoat OPV; slip level affects rub

In-line corona treatment with sufficient power to reach the stated level at the printing station is recommended. Because label films vary widely between suppliers and grades, each film must be evaluated for adhesion, colour position and end-use properties before commercial printing, and the ECG characterisation must be repeated if the film grade is changed.

TECHNICAL SPECIFICATIONS

Binder system	Modified Nitrocellulose-polyurethane
Physical form	Liquid; ECG process set, spot and resist colours, label white, shrink white (Nexasleeve), reducing medium, silver, gold and two OPVs
Solids content	26 – 36 % colours; 58 % Opaque White; 54 % Nexasleeve White; 28 % Low Static Label OPV; 24 % Medicoat OPV
Viscosity as supplied	22 – 28 s, Ford Cup B4 (4 mm) at 25 °C
Printing viscosity	17 – 20 s, Ford Cup B4 (4 mm) at 25 °C – CI flexo
Typical reduction	5 – 10 % with the standard reducer
Standard reducer	80 / 20 n-propanol / n-propyl acetate
Colour reference	Pantone® Extended Gamut Coated Guide; ISO 12647-6 (flexographic printing) as process reference
Heat resistance	Up to 160 °C (ink film on BOPP, 1 s, 1 bar)
Gloss	High – ≥ 55 GU at 60° on pearlescent BOPP
Plate compatibility	All photopolymer plates; optimised for HD / flat-top digital plates
Anilox	Ceramic laser-engraved, 60° hexagonal; fixed anilox set per station (see Printing Guidelines)
Flammability	Highly flammable liquid – see SDS

PERFORMANCE PROPERTIES

Typical results obtained on 38 µm corona-treated pearlescent BOPP at reference film weight, with and without Low Static Label OPV. Ratings: E = excellent, VG = very good, G = good. All values are indicative and must be confirmed on the customer's film and press.

Property	Test method	Ink only	With Low Static Label OPV
Adhesion	Tape test, 3M 610 / ASTM D3359 (adapted)	E	E
Scuff / rub resistance	Sutherland rub tester, ASTM D5264, 100 strokes, 2 lb	G	E
Ice-water / condensation resistance	24 h immersion at 0 – 5 °C, tape test wet	VG	E
Water resistance	Wet-cloth rub, 20 double rubs	VG	E
Blocking resistance	Face-to-back, 40 °C, 100 kPa, 24 h	E	E
Heat resistance	Heated jaw, 160 °C, 1 s, 1 bar	G	G
Hot-melt glue lap compatibility	Bond to glue lap after 24 h	Verify per glue	Keep OPV off lap ¹
Static charge / COF	Static meter; ASTM D1894 dynamic COF	–	Controlled by OPV

¹ Unless the OPV is specifically qualified for hot-melt adhesion, leave the glue lap of wraparound labels unprinted and unvarnished, or confirm seam strength with the glue supplier.

² Achievable with adequate between-colour and tunnel drying; retained solvent is the principal cause of odour complaints on beverage labels.

PRINTING AND APPLICATION GUIDELINES – CI FLEXO

Reference press conditions

ECG printing depends on holding every variable that influences colour constant. The following reference conditions are the starting point for fingerprinting; once the characterisation is built, they must not be changed without re-profiling.

Screen ruling	150 – 175 lpi (60 – 70 l/cm); 133 lpi for coarse pearlescent grades
Plates	Digital photopolymer, flat-top / HD; surface screening (microcell) on solids for density and smoothness
Minimum printing dot	1 – 2 % at 150 lpi with flat-top plates; use plate-side bump curve, never anilox volume, to open highlights
Mounting tape	Medium-soft for combination plates; soft for halftone-only plates; hard for solid white
Impression	Kiss impression – set on the white, then each process station to the lightest setting that prints clean 2 % dots
Target solid densities (guide)	C 1.50 · M 1.40 · Y 1.00 · K 1.70 · O 1.30 · G 1.50 · V 1.60 (ISO status T, absolute white)
Tolerances in production	Density ± 0.05 per station; $\Delta E_{00} \leq 2.0$ for brand colours, ≤ 3.0 for general work against the approved reference

Anilox specification

A fixed anilox set is the single most important hardware requirement for ECG. All seven process stations should carry the same engraving specification so that the tone-value curve is identical across the palette; anilox volume should be verified with a volume gauge every three months and after any cleaning.

Station	Line count	Volume (cm ³ /m ²)	Engraving	Notes
Process colours C, M, Y, K, O, G, V	1,000 – 1,200 lpi (400 – 470 l/cm)	2.5 – 3.5	60° hex, ceramic	Same specification on all seven stations
Line and solid spot work from ECG palette	600 – 800 lpi (240 – 315 l/cm)	3.5 – 5.0	60° hex, ceramic	Where a dedicated solid station is used
Haptone FL Opaque White (labels)	300 – 400 lpi (120 – 160 l/cm)	8 – 12	60° hex or open-channel	Opacity ≥ 53 % on transparent OPP at single hit
Nexasleeve White (shrink sleeves)	250 – 350 lpi (100 – 140 l/cm)	10 – 14	60° hex or open-channel	Last-down backing white; two hits where full opacity over dark containers is required
Haptone FL Silver / Gold	250 – 400 lpi (100 – 160 l/cm)	6 – 9	60° hex or open-channel	Higher volume for brilliance; overprint with Low Static Label OPV for rub resistance
Haptone FL Low Static Label OPV	400 – 600 lpi (160 – 240 l/cm)	5 – 8	60° hex	Dry coat weight 0.4 – 0.5 g/m ² ; also over Nexasleeve White on sleeves
Medicoat Gloss High Scuff OPV	400 – 600 lpi (140 – 200 l/cm)	6 – 9	60° hex	Dry coat weight 0.4 – 0.5 g/m ² on hygiene packs

Printing viscosity

Haptone FL inks must be stirred thoroughly until completely homogeneous before use. Reduce to press viscosity with the standard reducer, in small steps, and re-check after every addition. Dedicate one clean viscosity cup to each station and never transfer a cup between colours. On presses fitted with automatic viscosity control, set each station to the fingerprinted value and lock it; a viscosity drift of two seconds is visible as a density shift of approximately 0.05 – 0.10 on fine aniloxes.

Printing process	Viscosity (Ford Cup B4, 4 mm, 25 °C)	Remarks
CI flexo – process stations	17 – 20 seconds	Hold within ± 1 s of the fingerprinted value
CI flexo – opaque white	20 – 24 seconds	Do not over-reduce; opacity falls with viscosity

Solvent reducers

Reducer	Composition (by weight)	When to use
Normal	80 / 20 n-propanol / n-propyl acetate	Standard conditions and dryer capacity
Retarder	80 % n-propanol / 10 % ethoxypropanol (EP) or propoxypropanol (PnP) / 10 % n-propyl acetate *	Fine aniloxes, highlight dots and vignettes; hot or dry pressroom. Add up to 10 % of the reducer, never neat
Accelerator	80 / 20 ethanol / ethyl acetate	High press speeds or limited dryer capacity; use with care on white

Because ECG stations run 1,000 lpi or finer aniloxes, drying-in on the plate is the most frequent cause of tonal drift. A small, controlled proportion of retarder in the reducer is preferable to periodic plate cleaning during the run; the same reducer blend must then be used from fingerprint to production. * Ensure drying is adequate to remove all retarder before rewinding.

Drying

Set between-colour dryer air to give a dry, non-tacky ink film entering the next station without excessive web temperature. Pearlsed and thin transparent BOPP films curl and lose flatness if overheated; keep the web below approximately 60 °C and rely on air volume and velocity rather than temperature. Tunnel drying should remove residual solvent to the level required for odour-sensitive beverage labels; verify by headspace GC on the first reels of a new job.

Wash-up and press hygiene

Alcohol / acetate blends are more effective than alcohol alone. Keep aniloxes turning during stoppages, wash plates promptly and clean fine aniloxes on a fixed schedule (ultrasonic or laser, with cell-volume verification) – a partially plugged 1,200 lpi anilox loses colour strength long before it is visible to the eye.

COLOUR MANAGEMENT AND PROCESS CONTROL

Haptone FL is the colour engine of the ECG workflow; the workflow itself is built on the press. Arctic Materials recommends the following implementation sequence, which our technical team can carry out with the converter's prepress and quality teams:

1. Press fingerprint: print the Arctic ECG fingerprint form on the production film with the reference press conditions above. Record solid density, $L^*a^*b^*$, tone-value increase, minimum dot, trap and impression for every station, and file the anilox, tape, plate, viscosity and reducer used.
2. Optimisation: adjust anilox volume, plate curve and impression until all seven stations print within the target tone-value curve; a common curve across the palette is the objective.
3. Characterisation: print the seven-colour characterisation chart (ECG test target) and measure with a spectrophotometer (D50 / 2°, M0 or M1 per ISO 13655, backing as specified) to build the press ICC / device-link profile in the ECG colour-management software.
4. Brand-colour verification: convert the customer's spot colours through the profile, produce a contract proof and press drawdown, and agree the ΔE_{00} tolerance for each brand colour before the first production job.
5. Production control: run the fingerprinted anilox set, plate curve, tape and reducer without change; check density and ΔE_{00} against the approved reference at start-up and at every reel change; record viscosity and temperature per station. Re-verify the profile whenever film grade, anilox, plate type or ink batch series changes.

Keep constant from fingerprint to production

- + anilox line count and volume per station; mounting tape; plate type, thickness and screening;
- + ink viscosity and reducer blend per station; print sequence; impression settings;
- + film grade and treatment level; spectrophotometer settings, backing and measurement condition;
- + target densities and tolerances signed off with the brand owner.

LABEL CONVERSION NOTES

- + Wraparound labels: leave the hot-melt glue lap unprinted and unvarnished unless the ink and OPV have been qualified for glue adhesion; confirm seam strength after 24 hours.
- + Static control: transparent and pearlsed BOPP labels build static charge on slitters and labelling machines, causing mis-feeds and double labels. Print Low Static Label OPV over the full label face (excluding the glue lap) to bring surface resistivity and COF into the range specified by the labelling-machine manufacturer.

- + Condensation: beverage labels pass through ice buckets and chilled display. Ice-water resistance must be verified on the production film with the actual ink film weight and OPV coat weight, not on laboratory drawdowns alone.
- + Slitting and rewinding: allow the printed reel to cool before rewinding at production tension; excessive tension on warm pearlescent film causes blocking and print set-off on the reverse side.
- + Odour: beverage brand owners specify residual-solvent limits; validate drying on the first commercial run by headspace GC and keep the retained-solvent record with the job file.

SHRINK-SLEEVE APPLICATION – PVC AND PET-G

Haptone FL colours are used for reverse printing of shrink-sleeve labels on PVC and PET-G film, with Nexasleeve White (130000129640) as the backing white. Nexasleeve White is a high-opacity, shrink-grade white formulated to follow the film at high shrink ratios without cracking, whitening or loss of opacity, and it must not be replaced by the label white of the range. The printed ink layer lies on the inside of the sleeve, between the film and the container, so the white and the varnish applied over it are the layers exposed during seaming, rewinding and shrinking.

Print sequence (reverse print)	Black → Green → Orange → Yellow → Magenta → Cyan → Violet → (Silver / Gold) → Nexasleeve White → Low Static Label OPV over the white
Backing white	Nexasleeve White, 10 – 14 cm ³ /m ² anilox; two hits for full opacity over dark or coloured containers
Protective varnish	Haptone FL Low Static Label OPV over the white at 1.0 – 1.5 g/m ² dry – advised on all flexo shrink-sleeve work
Drying	Air volume rather than temperature; keep the web well below the shrink onset of the film (PVC ≈ 60 °C, PET-G ≈ 70 °C) and use chill rolls where fitted
Seam zone	Keep the solvent-seam area free of ink and varnish; confirm seam strength with the seaming solvent in use
Validation	Test adhesion, opacity, cracking and colour shift at the maximum shrink of the sleeve (typically 50 – 70 % TD) in the production steam or hot-air tunnel

- + The antistatic Label OPV over Nexasleeve White markedly improves the scratch resistance of the white during seaming, slitting and sleeve application and its water resistance in the steam tunnel and in chilled distribution; without it, the white is the layer most likely to be marked.
- + Because shrink films are heat sensitive, dryer settings established for BOPP labels cannot be transferred; re-fingerprint and re-characterise the ECG profile on the shrink film, where reverse printing also changes the print sequence and the trap.
- + Reverse-printed colour on clear film is viewed through the film: profile and proof against the film-and-white sandwich, not against white paper.

HYGIENE PACKAGING – CPP AND PE

The high-resist, high-light-fastness grades of the Haptone FL range are suitable for surface printing of hygiene packs – diaper and feminine-care outer bags, flow-wraps and pouches – on corona-treated CPP and PE film. These packs are handled and rubbed intensively in distribution and on retail shelves, so the print is protected with Medicoat Gloss High Scuff OPV, a hygiene-grade gloss overprint varnish formulated for very high scuff and rub resistance and low odour.

Recommended colours	Grades marked H in the Colour Range: Resist Yellow, Resist Magenta, Process Cyan, Process Black, Resist Violet, Resist Green, Mid Red, LF Warm Red, Reflex Blue, RD Orange, Pink and Opaque White. Process Yellow, Process Magenta and Opaque Yellow are not recommended for hygiene packs
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Protective varnish	Medicoat Gloss High Scuff OPV at 0.4 to 0.5 g/m ² dry over the full printed face, applied from the last station
Substrate treatment	CPP and PE ≥ 38 dynes/cm, preferably 40 – 42 dynes/cm with in-line corona; slip-additive level of PE affects rub and must be controlled
Heat-seal areas	Confirm heat-seal strength through ink and varnish, or keep seal areas unprinted; heat resistance of the ink film up to 160 °C
Resistance tests	Sutherland rub (ASTM D5264) over Medicoat OPV; alkali / soap resistance (ISO 2836); light fastness ≥ 5 BWS for shelf exposure
Odour	Validate retained solvent by headspace GC; hygiene brand owners specify low-odour packs

COLOUR RANGE

The Haptone FL range is built around a matched seven-colour ECG process set and is completed by resist and spot colours for conventional work, a high-opacity label white, Nexasleeve White for shrink sleeves, a reducing medium, silver and gold metallics, the Low Static Label OPV and Medicoat Gloss High Scuff OPV for hygiene packs. The pigment selection of the ECG set is fixed to guarantee a constant colour position for the press profile; substitution of any process colour by another grade invalidates the characterisation.

Ink code	Ink name	Solids % (± 2)	Light fastness ¹	AR / SR ²	Role ³
130000129501	Haptone FL Process Yellow	30	4	Yes	ECG – Y · L S
130000129502	Haptone FL Process Magenta	30	4	No	ECG – M · L S
130000129503	Haptone FL Process Cyan	32	7 – 8	Yes	ECG – C · L S H
130000129504	Haptone FL Process Black	33	7 – 8	Yes	ECG – K · L S H
130000129507	Haptone FL HF Orange	29	4 – 5	Yes	ECG – O · L S
130000129509	Haptone FL Resist Green	31	7 – 8	Yes	ECG – G · L S H
130000129508	Haptone FL Resist Violet	29	7 – 8	Yes	ECG – V · L S H
130000129505	Haptone FL Resist Magenta	28	5	Yes	Resist · L S H
130000129506	Haptone FL Resist Yellow	28	5	Yes	Resist · L S H
130000129510	Haptone FL Mid Red	34	7	Yes	Spot · L S H
130000129511	Haptone FL LF Warm Red	32	7	Yes	Spot · L S H
130000129512	Haptone FL Opaque Yellow	30	4	Yes	Spot · L S
130000129513	Haptone FL Reflex Blue	29	6	Yes	Spot · L S H
130000129514	Haptone FL RD Orange	32	5 – 6	Yes	Spot · L S H
130000129515	Haptone FL Pink	26	6 – 7	Yes	Spot · L S H
130000129516	Haptone FL Opaque White	58	8	Yes	Label white · L H
130000129640	Nexasleeve White	54	8	Yes	Shrink white · S
130000129517	Haptone FL Reducing Medium	21	na	Yes	Extender · L S H
130000129519	Haptone FL Silver	36	na	Yes	Metallic · L S

Ink code	Ink name	Solids % (± 2)	Light fastness ¹	AR / SR ²	Role ³
130000129520	Haptone FL Gold	35	na	Yes	Metallic · L S
130000129518	Haptone FL Low Static Label OPV	28	na	Yes	OPV · L S
130000129740	Medicoat Gloss High Scuff OPV	24	na	Yes	OPV · H

¹ Light fastness of the full-tone print on the Blue Wool Scale 1 – 8 (ISO 12040), where 8 is the highest. Standard pigments are not intended for prolonged exposure to direct sunlight; for outdoor or high-exposure applications, high-light-fastness pigments must be specified at the time of ordering.

² AR / SR = alkali and soap resistance (ISO 2836): Yes = resistant, No = not resistant, na = not applicable. Process Magenta is not alkali / soap resistant; for household, detergent and personal-care labels use Resist Magenta and Resist Yellow, and confirm the ECG profile with the resist set if it replaces the standard process colours. Resistance to specific products must always be confirmed by end-use testing.

³ Role: ECG = member of the seven-colour Expanded Colour Gamut set; L = wraparound and cut-and-stack labels on BOPP; S = shrink sleeves on PVC / PET-G with Nexasleeve White; H = hygiene packs on CPP / PE with Medicoat Gloss High Scuff OPV.

The ECG process palette

The seven inks marked ECG in the table form the fixed Haptone FL Expanded Colour Gamut palette. Together they reproduce the large majority of the Pantone® solid coated library when printed to the reference conditions and characterised as described in the Colour Management section. Spot colours from the range remain available for jobs outside the achievable gamut, for corporate colours that the brand owner insists on printing as a dedicated ink, and for conventional four-colour work with an additional spot station.

Metallic inks – Silver and Gold

- + Stir thoroughly before use and keep the ink circulating during the run; metallic pigments settle quickly in low-viscosity systems. Use a dedicated pump and chamber for metallics and never return metallic ink to a process-colour container.
- + Run at the upper end of the viscosity range (20 – 24 s Ford Cup B4) and from a 250 – 400 lpi anilox; excessive reduction or a fine anilox produces a dull, grey deposit.
- + Print silver or gold first down where metallic tints under process colours are required, and last down (before OPV) for maximum brilliance. Overprint with Haptone FL Low Static Label OPV to protect against rub and metallic transfer.
- + Do not mix metallics with other Haptone FL colours on press; tinted metallics should be supplied ready-made from the ink kitchen.

Haptone FL Low Static Label OPV

Haptone FL Low Static Label OPV (130000129518) is a gloss, solvent-based overprint varnish formulated to dissipate static charge and to set the coefficient of friction of the printed label. It is applied from the last station of the press at 0.4 to 0.5 g/m² dry over the full label face, excluding the hot-melt glue lap unless glue adhesion over the varnish has been qualified. Apply at 17 – 20 s Ford Cup B4 with the standard reducer; over-reduction lowers the dry coat weight and with it the antistatic effect and rub protection. Surface resistivity and dynamic COF should be verified on the labelling machine during the first commercial run. On shrink sleeves the same varnish is applied over Nexasleeve White to protect the white against scratching and water.

Medicoat Gloss High Scuff OPV

Medicoat Gloss High Scuff OPV is a hygiene-grade, solvent-based gloss overprint varnish for the surface-printed hygiene packs described above. Formulated from raw materials selected for hygiene packaging and for low odour, it provides very high scuff and rub resistance together with water and product resistance on CPP and PE. Apply from the

last station at 0.4-0.5 g/m² dry and 17 – 20 s Ford Cup B4; confirm heat-seal performance through the varnish on the production sealing equipment.

STORAGE, HANDLING AND WASTE DISPOSAL

Storage

Haptone FL inks are classified as highly flammable liquids. Suitable precautions must be observed to avoid ignition sources; warehouses must be approved and equipped accordingly. Store in tightly sealed original containers between 5 °C and 35 °C, away from direct sunlight and heat. For optimum stability, storage between 10 °C and 25 °C is recommended.

Shelf life

A storage stability of 12 months from the date of manufacture is guaranteed for unopened containers with intact seals when stored under the above conditions. Inks may still be fit for purpose beyond the recommended shelf life; their condition and performance should be checked before use. Please contact your Arctic Materials technical representative for advice if required.

Waste disposal

Printing inks, coatings and printing residues should be handled in accordance with normal standards of industrial hygiene and good manufacturing practice and disposed of in accordance with good industrial practice, observing all applicable regulations and guidelines. For more specific handling advice refer to the Safety Data Sheet (SDS), which will be supplied with the product.

HEALTH, SAFETY AND REGULATORY COMPLIANCE

Haptone FL inks are formulated in accordance with the latest CEPE / EuPIA guidelines and the EuPIA Exclusion Policy for printing inks and related products. Specifically, the formulations exclude:

- + substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR categories 1A and 1B) or as acutely toxic (formerly labelled T+ / T under Directive 67/548/EEC, now covered by the CLP Regulation (EC) No 1272/2008);
- + pigments based on compounds of antimony (Sb), arsenic (As), cadmium (Cd), chromium VI (Cr(VI)), lead (Pb), mercury (Hg) and selenium (Se);
- + certain dyes, solvents, plasticisers and miscellaneous materials listed in the Exclusion Policy. A copy of the supporting declaration is available on request.
- + All Arctic Materials products are designed with end-use safety built in and must not be mixed with products from other manufacturers.

Conditions for acceptable technical performance

The performance of Haptone FL inks in the finished package depends on factors that are under the control of the printer or converter. Acceptable technical performance is dependent on:

- + control of ink application weight (anilox / cylinder volume, plate and press settings);
- + adequate drying on press, so that the print is fully dry before rewinding and any subsequent conversion;
- + an appropriate packaging design and structure for the intended end use;
- + control of all potentially migratable substances within the finished packaging structure, including those from substrates, adhesives, coatings and other components not supplied by Arctic Materials.

The choice and control of substrate, design (including coverage and coat weight), process conditions and any materials from other suppliers are the technical responsibility of the printer or converter.

Food packaging (indirect / non-contact applications)

It is the ultimate responsibility of the food packer to ensure that the packaged food is safe. With regard to potential migration of substances into the foodstuff from printed packaging, it is the responsibility of the converter and the packer/filler to ensure that migration does not exceed any applicable legal or industry limits. To fulfil its responsibility within the supply chain, and following the signing of a legally binding mutual non-disclosure agreement, Arctic Materials will provide the customer with details of any potentially migratable components present in its products through a Statement of Composition.

DISCLAIMER

These products are suitable only for use on the non-food-contact side of food packaging, provided that they are applied under the relevant Good Manufacturing Practices (GMP) and in accordance with the recommendations of this Technical Data Sheet. The printers, converters and packer/fillers have the legal responsibility to ensure that the finished article is fit for its intended purpose and that ink and coating components do not migrate into the food at levels that exceed legal and industry requirements. Please refer to the Safety Data Sheet (SDS) before use to ensure safe handling.

The information given in this document is supplied as a guide only and describes properties achieved under laboratory conditions. Arctic Materials strongly recommends that users satisfy themselves as to the suitability of the product by carrying out their own trials under commercial conditions. Because the conditions of use and the quality of materials and substrates are outside our control, it is not possible to guarantee the performance of our products, and Arctic Materials does not accept liability for any loss, damage or injury resulting from their use, except as required by law. Please consult our laboratory to discuss any requirement not covered by this data sheet.

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