Cometal Technical Data Sheet

Cometal is a series of single-package, UV curable screen-printing inks formulated for use on most polyester and vinyl coated metal substrates. These inks are flexible and can be used on decorated metal parts that will be subsequently bent or embossed.

typical characteristics and features

Cometal inks are formulated to have the following properties:

- Fast curing
- Good inter-coat adhesion
- Outdoor durability for exterior applications
- Good abrasion and chemical resistance for metal decorating applications

technical information and handling

Pigment selection and color range

Cometal inks are available in the SunMatch™(1) range of colors including nine (9) strong, bright, mono-pigmented shades which together with white, black and mixing clear form a complete blending system allowing the matching of virtually any shade.

(1) SunMatch™ is a copyrighted color matching system from Sun Chemical that can simulate the universal color references of the Pantone® 1000 guide.

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The color range for Cometal is fully compatible with both Formulator scales and Formulator IDS color management systems.

Screen mesh

355 – 420 / inch (140 – 165 / centimeter) monofilament polyester mesh or finer is suitable. If coarser fabrics are used, curing parameters must be adjusted to achieve sufficient cure. 305 – 355 / inch (120 – 140 / centimeter) mesh is recommended for exterior durability.

Squeegee

Sharp urethane squeegee of approximately 75 – 85 durometer is recommended.

Coverage

When printed through a 380 / inch (150 / centimeter) plain-weave mesh, Cometal inks cover approximately 3000 feet squared (ft^2) /gallon, depending on printing variables. Higher coverage can be achieved when finer mesh counts are used.

Product Code	Description	SAP Number
Cometal-C135	Process Cyan	90852329
Cometal-Y131	Process Yellow	90852340
Cometal-M140	Process Magenta	90852248
Cometal-K171	Process Black	90852342
Cometal-PC	Process Clear	90862949
ST-290	Viscosity Modifier*	90020030
ST-370	Cure Accelerator	90020061
Cometal-Y30	SunMatch Primose	90849073
Cometal-Y50	SunMatch Golden Yellow	90852328
Cometal-O50	SunMatch Orange	90852327
Cometal-R20	SunMatch Scarlet	90852253
Cometal-R50	SunMatch Red	90066718
Cometal-M50	SunMatch Magenta	90863197
Cometal-V50	SunMatch Violet	90852264
Cometal-B50	SunMatch Blue	90852281
Cometal-G50	SunMatch Green	90852263
Cometal-N50	SunMatch Blending Black	90863100
Cometal-W50	SunMatch Blending White	90066782
Cometal-E50	SunMatch Mixing Clear	90094192
Cometal-Y35	XL Primrose Yellow	90852343
Cometal-Y55	XL Primrose Golden Yellow	90852341
Cometal-O55	XL Primrose Orange	90852326
Cometal-R25	XL Primrose Scarlet	90852324
Cometal-R55	XL Primrose Red	90852325
Cometal-N70	Opaque Black	90066719
Cometal-W70	Opaque White	90066723
Cometal-C50	Overprint Clear	90890809

In accordance with information received from suppliers, the full Cometal series is formulated without heavy metals and complies with: 16 CFR, Part 1303; ANSI Z66, 1-1964; ASTM F 963; CONEG packaging regulations; EC Packaging Waste Directive EC/94/62; EN71m section 3; RoHS 2002/95/EC; WEEE 2002/96/EC; E2003/11/EC.

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Modification

Cometal inks are single packaged inks and do not require the use of any additives under normal printing conditions. If needed, the following additives are available for modification:

- ST-290 Viscosity Modifier – use up to 5% by weight
- ST-370 Cure Accelerator – use 1 – 5% by weight

Curing

Generally, a typical 10 – 12 micron deposit of a Cometal ink color achieved with a 380 / inch (150 / centimeter) mesh will require UV exposure of approximately 200 – 300 millijoules (mJ) / centimeters squared (cm^2), as measured with an IL390 International Light Radiometer. Opaque blacks and whites require significantly more irradiation to successfully cure.
Actual cure speeds will vary, depending on ink color, mesh, ink film deposit, opacity, number of color components (in a color blend), and type of UV lamps, in addition to a wide range of other processing parameters.

clean-up

Cometal inks can be cleaned from screens and processing equipment with any suitable screen wash, such as VL wash.

substrates

Cometal can be used on:

- Polyester-coated and vinyl-coated metal substrates

Note: Cometal inks are not suitable for use on powder coated or raw metal substrates. Pre-test all substrates carefully prior to use in a production run.

exterior durability

Cometal inks can withstand exterior exposure up to 5 - 7[1] years when properly printed and processed. Please refer to the Cometal Weathering Statement for full details of expected outdoor durability. The use of Cometal C50 overprint clear is required for exterior durability. For increased outdoor durability, Cometal XL colors should be used.

[1]Based on accelerated weathering tests simulating exposure to Northern USA and Middle European temperate climates.

chemical resistance

These inks have resistance to gasoline and have passed 100 wet rub cycles when properly printed and processed.

metallic inks

Aluminum and Bronze pigments can be used with Cometal E50 mixing clear to produce ink with metallic appearance. Typical levels by weight are 15 – 20% Bronze paste for gold colors and 5 – 10% Aluminum paste for silver colors. Cometal E50 with metallic pigment must be considered a two-pack system with less than 24 hours (approximate) pot-life. Mix as needed.

storage considerations

If Cometal inks are stored in temperatues between 40° – 90°F (5 – 32°C), these coatings have a shelf-life of twenty-four (24) months.

safety, health and environment

Cometal inks should be used in accordance with normal standards of industrial hygiene and good manufacturing practice. Please refer to the supplied Safety Data Sheet for specific information. Safety Data Sheets will be supplied.

Printing inks, coatings and printing residues should be disposed of in accordance with local and national regulations.

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