

OEM Technical Data Sheet

OEM inks are a series of single-package UV curable inks formulated for printing on the polycarbonate and top-coated polyester used in the manufacture of panel displays, membrane switch overlays and nameplates. These inks are flexible and are for use when producing formed 3-dimensional parts.

typical characteristics and features

OEM inks are formulated to have the following properties:

- High degree of flexibility. Suitable for thermoforming, vacuum-forming, Accuform, and Neibling processes
- Multiple-pass inter-coat adhesion
- Strong image definition
- Resistance to de-lamination when in contact with pressure-sensitive adhesives
- Meets Ford Material Specification WSS-M2P184-A for interior appliqué and instrument clusters

technical information and handling

Pigment selection and color range

OEM inks are available in a special 700 Series high density color range for automotive and appliance displays, which can be used at full strength or blended with OEM-799 mixing clear to produce transparent or translucent colors, or blends using metallic pigments.

Pre-testing

Pre-testing of all components and phases of application prior to use in production to ensure adequate performance is recommended.

Note: For best results, adhesives should be applied 24 hours after curing. The surface of polycarbonate and top-coated polyesters can deteriorate and become less receptive to printing inks due to a combination of factors including substrate grade; processing conditions; excessive exposure of the substrate to UV radiation; and spectral output of the particular UV curing unit. Blends of these inks containing a high percentage of white or clear will reduce lightfastness properties. Any outdoor application requiring the use of white for either printing or blending purposes it is recommended that OEM-W50 Blending White is used. OEM-W70 White is not suitable for outdoor exposure.

Screen mesh

Recommended screen mesh between 305 – 420 / inches (120 - 165 / centimeters) monofilament polyester mesh, or finer, is suitable for processing. It is possible to use coarser fabrics, curing parameters need to be adjusted for sufficient cure of the increased ink film deposit.

Squeegee

Sharp urethane squeegee of approximately 75 – 85 durometer is recommended for use with these inks.

Product Code	Description	SAP Number
OEM-711	700 Series GS Yellow	90977081
OEM-715	700 Series RS Yellow	90977366
OEM-721	700 Series YS Red	90977367
OEM-725	700 Series BS Red	90977368
OEM-749	700 Series Green	90977365
OEM-755	700 Series RS Blue	90977600
OEM-759	700 Series GS Blue	90977497
OEM-783	700 Series Magenta	90977498
OEM-785	700 Series Violet	90977499
OEM-799	700 Series Mixing Clear	90977570
OEM-N50	Standard Color Blending Black	90977496
OEM-W50	Standard Color Blending White	90977577
OEM-W501	High Density Opaque White	90994416
OEM-W70	High Density Super Opaque White	90977578
OEM-N70	High Density Opaque Black	90977571
ST-350	Viscosity Modifier	90020050

In accordance with information received from suppliers, the full OEM 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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Coverage

When printed through a 380 / inch (150 / centimeter) plain-weave mesh, these OEM inks will cover approximately 3000 feet squared (ft²) / gallon, depending on printing variables. Higher coverage can be achieved when finer mesh counts are used.

Modification

These OEM inks do not require the use of additives under normal printing conditions. If viscosity reduction is required, 3 – 5% by weight of ST-350 Viscosity Modifier may be added.

Curing

Actual cure speeds for the OEM inks are dependent on a number of factors and processing variables, including ink film deposit; color shade, strength & opacity; mesh, wattage and type of UV lamps, efficiency of UV curing unit, and substrate. In addition, substrates have differing receptivity to UV ink, and on certain rigid and/or colored materials, or when preparing blends of these inks containing a high percentage of white or black, it may be necessary to increase UV energy to achieve satisfactory adhesion and cure.

The follow guidelines are recommended millijoule energy levels for an ink deposit of 10 microns:

OEM Series	Blending Colors	300-350 mJ/cm ²
OEM-W501	Opaque White	350-400 mJ/cm ²
OEM-W70	Super Opaque White	450-500 mJ/cm ²
OEM-N70	Opaque Black	500-550 mJ/cm ² *

Medium pressure mercury vapor lamps can be used to cure these inks.** The curing of high opacity dark colors requires the use of doped lamps.

*In applications when two layers of OEM-N70 are used to enhance opacity, 650-700 mJ/cm² is recommended for the second layer.

**Note: It is recommended to used doped lamps with iron or gallium.

clean-up

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

substrates

High Tech Automotove and OEM for use on:

- Polycarbonate
- Top-coated polyester substrates.

inter-coat adhesion

Sun Chemical OEM inks exhibit strong inter-coat adhesion and compatibility with pressure-sensitive adhesives. However, as with all UV inks, inter-coat adhesion should be monitored throughout the print run when processing multiple ink layers.

metallic inks

Most aluminum and bronze pigments can be used with OEM-799 mixing clear to produce inks with metallic appearance. Typical levels by weight are:

- 15 – 20% Bronze paste for gold colors
- 5 – 10% Aluminum paste for silver colors

Due to the instability of many metallic pigments, metallic blends must be considered a two-pack system with less than 24 hours (approximate) pot-life. Only mix sufficient quantities for immediate use.

storage considerations

If OEM inks are stored in temperatures between 40° – 90°F (5 – 32°C), these coatings have a shelf-life of thirty-six (36) months.

safety, health and environment

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

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

The information contained in this technical data sheet is only a recommendation and may need to be altered to suit the conditions and efficiency of the equipment employed. Our products are not designed for use in conjunction with those of any other ink maker or similar supplier unless agreed to in writing.

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