

Product: H.D. Panel Display

Series: C32™

DESCRIPTION: C32 High Density Panel Display inks make it possible for manufacturers of automotive and other forms of O.E.M. displays to achieve an unprecedented level of color control. Many inks cannot fulfill the increasingly stringent color specifications of such products. The clarity of the C32 transparent colors, coupled with the high-opacity blacks and whites, facilitates efficient production of first and second-surface panel displays, switches, control faces, automotive lenses and other critical O.E.M. markings.

All C32 inks are monopigmented and of a much higher color density than the typical inks used for P.O.P. applications. The monopigmented colors yield greater accuracy in color matching, for both computerized formula predictions and matching "by eye". The higher density facilitates compensation for color shifts caused by changes in mesh, viscosity adjustments, press speeds or variations of substrate color.

This combination of purity and high density enables quick and accurate color correction with a minimum quantity of ink. These benefits are also realized when correction is required on-line at the press. All C32 inks are formulated using non-lead compounds.

CERTIFICATE OF ANALYSIS: Certificates of Analysis for each batch of C32 product are available upon request. The certificate documents: Color; Dispersion (fineness of grind); 60° Gloss; Transmission density; Viscosity; Specific Gravity.

SUBSTRATES AND APPLICATIONS: The C32 Series is designed for applications on rigid and flexible polycarbonate, top-coated polyester, acrylic and PVC.

COLORS: All C32 inks are high-density, monopigmented colors. Several of the shades are available in both transparent and H.O. (high opacity) pigments. The H.O. pigments are best suited for use in graphic colors not requiring back-lighting.

The specific hue of any pigmented ink viewed with reflected light may frequently differ from the same ink observed using transmitted light (backlit). The difference in observed color between these two types of illumination depends on pigmentation, thickness of ink deposit, the light source used for observation and the color of the substrate to which the ink is applied. The description of all C32 H.O. colors refers to reflected viewing; C32 transparent colors are described as if backlit.

COLOR PREPARATION: Although all C32 inks have very high color density, they may be printed without modification other than minor viscosity reduction. Color densities of this level are seldom needed, therefore ink color-density may be reduced to the required level with C32-S199 Gloss Mixing Clear. If a lower gloss level is required, color may be let-down with C32-S195 Matte Mixing Clear. In either case, the exact ratio of color to clear will depend upon the variables of mesh, stencil, rheology, press type and speed required for the specific application.

Tinting for darker shades is performed with C32-S170 H.O. First-Surface Black. Tinting with white should be done with C32-S101 Gloss White. For best results all blends should be thoroughly mixed with a high speed mixer to assure consistent color throughout the batch.

See **MODIFICATION** section. Assistance with custom color formulations is available through our Technical Service Laboratories. Contact your Sun Chemical representative for further details on formula prediction services.

BLACKS:

C32-S170 H.O. First-Surface Black - a gloss-finish black for top-surface applications or color tinting.

C32-S172 Deadfront Black - a more transparent black for deadfront effects.

C32-S175 H.O. Subsurface Black - a satin-finish second-surface black formulated to resist delamination when used with acrylic mounting adhesives.

WHITES:

C32-S101 H.O. Gloss White - The standard white for color matching; may be used as an H.O. White when a gloss finish is required.

C32-S103 Matte White - higher opacity than C32-S101. It can be used as an H.O. first-surface white or blended with either of the mixing clears for use as a diffuser white.

Custom blacks and whites can be formulated for special applications.

STENCIL: Photographic diazo, dual-cure or photopolymer direct emulsions or capillary films are recommended.

MILEAGE: Typical mileage range is 1500-2500 sq. ft./gal. of press-viscosity ink when printed through 230-355 thread/inch polyester monofilament mesh.

SQUEEGEE: All common types of squeegee blade may be used. 70-80 durometer polyurethane is typical. **Sun Chemical has the best squeegee for your particular application. Contact your local Sun representative for recommendations.**

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SCREEN MESH: Typical mesh range for the C32 series is 230-355 thread/inch polyester monofilament. For dense blacks some users prefer stainless wire cloth in the 270-325 thread/inch range as this allows greater ink deposit without loss of resolution. **Sun Chemical has the mesh best suited for your particular printing requirements. Contact your local Sun representative for details.**

MODIFICATION:

1. Viscosity Reduction: The standard thinner for C32 is ET-10 Reducer, with a typical range of 0-10% by weight. For exceptionally fine detail printing, or under adverse ambient conditions, either ET-12 Retarder or GEL-100 Gelled Retarder may be substituted for all or part of the reducer. The restricted flow of GEL-100 allows better print definition, particularly for reverse detail. If faster drying is required, ET-25 Reducer should be used. **NOTE:** The use of ET-12 Retarder or GEL-100 Gelled Retarder may decrease drying speed; ensure that drying is adequate before commencing a full production run. All color matches should be formulated to allow for additions of reducer/retarder.

2. Gloss Reduction: Up to 20% by weight of Matte Additive MAT-190 may be used to reduce gloss. A 10% addition of MAT-190 allows a satin finish, whereas a 20% addition allows a less reflective, more matte finish. **NOTE:** As with all inks, decreasing gloss may render prints more susceptible to slight surface scuffing.

DRYING: C32 High-Density Panel Display inks may be processed through conveyorized jet dryers. Caution must be exercised in adding ET-12 if normal drying speed is to be maintained.

WASH-UP: Screens may be cleaned with VL Wash, any of the recommended reducers, or any suitable commercial screen wash. **Sun Chemical has a variety of wash-ups including ECO friendly screen washes available for your particular needs. Contact us for *all* of your pre and post-press chemical requirements.**

HEALTH AND SAFETY: As with all inks, gloves and safety goggles should be used when handling this product. For more complete information, refer to the relevant **Material Safety Data Sheet.**

High Density Colors:				Whites:	
C32-M111	Transparent GS Yellow	C32-M155	Transparent RS Blue	C32-S101	HO Gloss White
C32-M113	HO GS Yellow	C32-M159	Transparent GS Blue	C32-S103	HO Satin White
C32-M115	Transparent RS Yellow	C32-M183	Transparent Magenta	Blacks:	
C32-M117	HO RS Yellow	C32-M185	Transparent Violet	C32-S170	HO 1 st Surface Black
C32-M119	HO Orange	Modifiers:		C32-S172	Deadfront Black
C32-M121	Transparent YS Red	ET-10	Reducer	C32-S175	HO Subsurface Black
C32-M123	Transparent Intermediate Red	ET-12	Retarder	Clears:	
C32-M125	Transparent BS Red	ET-25	Fast Reducer	C32-S195	Matte Mixing Clear
C32-M129	HO Lightfast Red	GEL-100	Gelled Retarder	C32-S199	Gloss Mixing Clear
C32-M149	Transparent BS Green	In accordance with information received from suppliers, the full C32 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; EN71, section 3; RoHS 2002/95/EC; WEEE 2002/96/EC; E2003/11/EC.			
C32-M152	Transparent Iron Blue				

All information on this data sheet is based on Sun Chemical laboratory tests and experience in print shops. Procedures and directions for use of Sun Chemical products (including printing and after-treatment) must be considered as recommendations only, with no warranties expressed or implied. The user of the products described herein is solely responsible for determining suitability of any Sun Chemical product for the particular application. Sun Chemical recommends that all products be pre-tested prior to full-scale production use. This data sheet supersedes all previous publications. Nov. 2008