

Product: ZM**Series: ZM™**

DESCRIPTION & APPLICATIONS: ZM inks are especially suited for printing onto metals (aluminum, steel, copper), coated surfaces, various thermoplastics (ABS, acrylics, pretreated polyolefins) and duroplastics (phenolic, melamine, glass fiber, reinforced polyester and epoxy resins).

CHARACTERISTICS: ZM inks dry to a high gloss and exhibit medium to good opacity. The degree of gloss, and in some cases the color shade, depend on the substrate. ZM inks must be processed as a two component system with catalyst.

PIGMENTS/LIGHTFASTNESS: ZM inks are available in 24 C-Mix standard colors and 4-color process inks. If blended inks are mixed to contain high contents of white or clear, lightfastness is reduced.

VISCOSITY MODIFICATION: Prior to processing, the viscosity of ZM inks is normally adjusted using 5-25%, by weight, of one, or a combination of the following modifiers: ZVS, ZVH and ZD. Universal thinner/retarder UV4 is also available.

CATALYSTS: ZM inks must be mixed with a catalyst prior to processing. For colors, catalysts are mixed at a ratio of 8:1 (ink:catalyst). For whites, catalysts are mixed at a ratio of 15:1 (ink:catalyst). Choice of catalyst is dependant on end-use requirements:

- **ZH** – confers high chemical resistance but has a short pot-life and prints tend to yellow when exposed to high temperatures. Allows ink to cure at temperatures below 75°F (25°C). Typical pot life of 3-4 hours
- **ZH-N** – confers high chemical resistance with medium pot-life and prints are non-yellowing. Ink cures only at temperatures above 120°F (50°C)
- **ZH-N00** – confers medium chemical resistance with extended pot-life but prints are non-yellowing. Ink cures only at temperatures above 120°F (50°C). Typical pot life of 5-6 hours.

DRYING: ZM inks dry Initially by evaporation of solvents, followed by chemical cross-linking. Tack-free drying time is approx. 20-25 min at room temperature. Tack-free drying times of 60-100 sec. can be achieved in a belt dryer at temperatures of approx. 140-180°F (60-80°C). Allow 24 hours for complete cross-linking and resistance properties.

METALLIC INKS: For printing of metallic decorative inks, Gold Bronze and Silver Aluminum pastes B75 to B79 are available. Metallic pastes must be blended with ZM-E50 Mixing Clear to produce ready-for-use inks. Typical formulas by weight would be:

25-30% Gold Bronze Paste + 70-75% ZM-E50 Mixing Clear

15-20% Silver Aluminum Paste + 80-85% ZM-E50 Mixing Clear

Metallic prints tend to oxidize when exposed to the atmosphere. The use of an overprint clear printed over the top of ZM metallic prints can delay this oxidizing process indefinitely. If metallic prints are to be overprinted, an additional 15-30% ZM-E50 is recommended in the metallic formula. Typical formulas for producing ready-for-use metallic inks that will be subsequently overprinted would be:

20-25% Gold Bronze Paste + 75-80% ZM-E50 Mixing Clear

10-15% Silver Aluminum Paste + 85-90% ZM-E50 Mixing Clear

NOTE: Check overprintability of metallic prints prior to commencing a full production run.

COVERAGE: When printed through a 230/in. [90/cm] mesh, one gallon of ZM inks will cover approx. 1200 square feet

SCREEN MESH: 200-305/inch monofilament polyester mesh. **Sun Chemical has the mesh best suited for your particular printing requirements. Contact your local Sun representative for details.**

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STENCIL: Direct photoemulsion, capillary film, indirect stencils or solvent-resistant hand-cut films.

CLEANING: ZM inks can be removed from stencils and tools using universal cleaning agent URS or URS3. 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.

SQUEEGEE: Medium to hard durometer urethane squeegee. Sun Chemical has the best squeegee for your particular application. Contact your local Sun representative for recommendations.

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.

Standard Colors:		Process Colors:	
ZM-10NT	Yellow NT	ZM-180	Euro Process Yellow NT
ZM-11NT	Medium Yellow NT	ZM-181	Euro Process Magenta NT
ZM-12NT	Dark Yellow NT	ZM-182	Euro Process Cyan NT
ZM-15NT	Orange NT	ZM-TP	Transparent Paste
ZM-20NT	Light Red NT		
ZM-21NT	Signal Red NT	Catalysts:	
ZM-22NT	Red NT	ZH	Hardener
ZM-25NT	Mauve NT	ZH-N	Non-Yellowing Hardener
ZM-30NT	Light Blue NT	ZH-N00	Special Hardener
ZM-32NT	Ultra Blue NT		
ZM-33NT	Dark Blue NT	Modifiers:	
ZM-34NT	Turquoise NT	ZD	Retarder
ZM-37NT	Violet NT	ZVH	Thinner
ZM-40NT	Light Green NT	ZVS	Thinner
ZM-50NT	Light Brown NT	In accordance with information received from suppliers, the full ZM 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	
ZM-60NT	White NT		
ZM-60HDNT	High Density White NT		
ZM-65NT	Black NT		
ZM-70NT	Clear NT		

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