

# ZODIAC™ LIBRA™

Silicone Screen Printing Inks For  
Performance And Athletic Apparel



## ZODIAC™ LIBRA™ SILICONE INKS

have been developed to meet the sustainability requirements of the consumer while providing the high stretch and soft feel on performance fabrics expected by brand owners and printers.

### PERFORMANCE ON THE GARMENT

- Achieve excellent soft drape and soft hand feel for use on soft substrates
- Stretch and elasticity allow the print to expand with the fabric when stretched and is ideal for highly elastic materials such as elastane, polyester and blends
- Durable inks can tolerate heavy washes for lasting strength
- Withstands higher temperatures once completely cured and can be ironed on a regular basis

### PERFORMANCE ON THE PRESS

- Lower cure temperature leads to minimal damage on sensitive fabrics and very little impact on dye migration, thus is ideal for polyester performance fabrics, wetsuits, swimwear and sublimated clothing





## PROCESSING GUIDE

### PREPARATION

Mixing	<ul style="list-style-type: none"> <li>Incorporate Libra Pigment Concentrates or Toners with Matte Mixing Base and the catalyst</li> <li>Mix catalyst with RFU Matte White at 3–5% by weight of catalyst</li> <li>Mix catalyst with mixed color formulas at 3–5% of total weight</li> </ul>
Base	<ul style="list-style-type: none"> <li>Use an underbase, such as Barrier Black on difficult fabrics for improved adhesion and migration control</li> </ul>

### POT LIFE:

As a rule, a lower percentage of catalyst will yield a longer pot life. Since the addition of catalyst begins the pot life, add only enough to color to print for 4–8 hours.

### FLASH

Method	<ul style="list-style-type: none"> <li>To achieve maximum opacity and maintain color brilliance, use a print-flash-print method for each color</li> </ul>
Time & Temperature	<ul style="list-style-type: none"> <li>Flash inks between 4–6 seconds, or less on hot pallets that are above at least 120°F</li> </ul>

### SQUEEGEE

Durometer	<ul style="list-style-type: none"> <li>Squeegees should generally have a medium durometer of 70, or 60/90/60 triple durometer hardness</li> </ul>
-----------	---

### CONTAMINATION

Inks	<ul style="list-style-type: none"> <li>Any contamination by materials such as tin complexes, sulfur and amines must be thoroughly avoided, as these will retard the curing process and negatively affect the adhesion of silicone inks</li> </ul>
Garments	<ul style="list-style-type: none"> <li>Avoid any potential of cross-contamination with PVC-containing products</li> <li>Dark colored garments may contain sulfur dyes that can inhibit curing</li> <li>Some synthetic fabric finishes may also cause cure inhibition, so test each fabric type before production</li> </ul>
Pallets	<ul style="list-style-type: none"> <li>Screen printing pallets must be free of any non-silicone ink residue. Even small amounts of PVC plastisol ink deposit on the pallet can release plasticizer under heat that will inhibit the curing of the silicone ink.</li> </ul>

### MESH

Mesh Count	<ul style="list-style-type: none"> <li>Recommended mesh size for Libra is between 86T and 230T.</li> <li>Lower mesh counts may improve opacity, stretch and durability</li> <li>Higher mesh counts yield finer detail, halftones and a lighter hand feel</li> </ul>
------------	---

## CURING

Temperature	<ul style="list-style-type: none"><li>Achieve a minimum ink film temperature of 270°F as measured on wet ink, not in the oven</li></ul>
Time	<ul style="list-style-type: none"><li>The above curing recommendation can be typically achieved with a 1-minute dwell time in the oven that is set above a temperature of 270°F</li></ul>

## CLEANING PROCEDURE

Screens	<ul style="list-style-type: none"><li>Screens should be completely cleaned directly after printing and before using other inks</li></ul>
Squeegees	<ul style="list-style-type: none"><li>Squeegees should be completely cleaned directly after printing and before using other inks</li></ul>

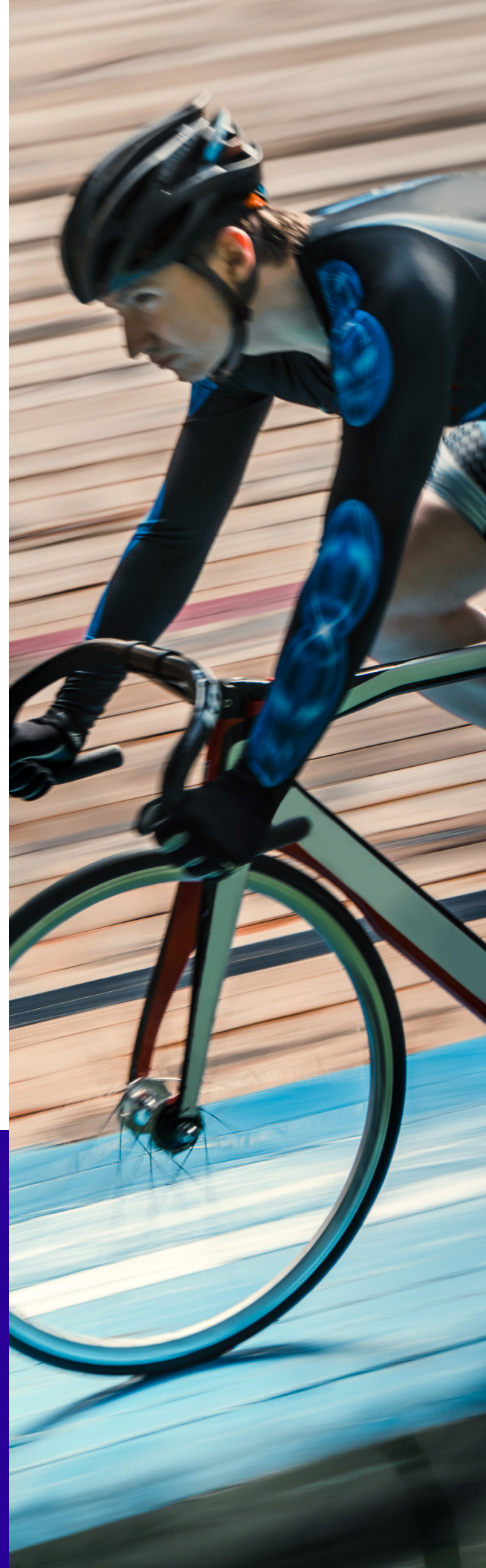
## BREAKDOWN OR STOPPAGE PROCEDURE

Ink	<ul style="list-style-type: none"><li>Use catalyzed silicone ink within 72 hours</li><li>Do not leave catalyzed silicone ink on the screen</li></ul>
Screens	<ul style="list-style-type: none"><li>Clean the image area with standard plastisol press wash for breakdown or stoppage</li></ul>

## STORAGE CONDITIONS

Inks	<ul style="list-style-type: none"><li>Catalyzed inks should be stored under room temperature or less</li><li>Store between 65°F to 95°F (18°C to 35°C)</li><li>Keep lid on container to maximize pot life of catalyzed inks</li><li>Use within 72 hours once the catalyst has been added</li><li>When storing in hot weather conditions, add up to 3% retarder to ensure sufficient pot life</li><li>Refer to technical data sheets for specific product used to tailor catalyst and retarder usage</li></ul>
------	---

Zodiac Libra silicone inks are highly suitable to print on performance wear and smooth polyester fabrics to provide a wide range of benefits such as high elasticity, soft feel and long-term durability. By using the standard portfolio of preset toner colors or the color mixing system, printers can design with the most popular team colors or match any custom shade.



PRODUCT	DESCRIPTION	USE INSTRUCTIONS
Matte Mixing Base	Silicone base used to mix with toners or mixing system pigments as the primary binder for Libra silicone inks	Combine with toners to produce preset tints or use the PC mixing system with 20% maximum pigment loading to produce precise custom colors (usage as an ink requires the addition of a toner or mixing system pigment and catalyst)
Pigment Concentrates	Concentrated pigment dispersions of 16 colors	Combine with the mixing base with 20% maximum loading to produce precise custom colors
Toners	Custom palette of popular color toners that are combined with the mixing base	Add premixed toner tints to the mixing base to produce ink matched to popular athletic colors
Specialty Toners	Special effect and metallic toners designed to create custom inks for detailed designs	Combine with matte clear and gloss clear or HD bases and tints to produce unique inks (once mixed with the base, the solution should be used within one week)
Clear Base-HD, Matte and Gloss	Clear polymer bases used to create textural effects and clear coat over prints to provide durability and abrasion resistance	Mix with special effect pigments, flakes or glitters, or use as a stand-alone base and catalyze before applying to the top layer of a print
Viscosity Reducer	Non-volatile reducer designed to thin inks if necessary to improve printability of inks	Incorporate reducer amount equal to 5% maximum of total ink weight to adjust viscosity
Catalyst	Cure catalyst required for every application	Measure catalyst amount equal to 3–5% of total ink weight and incorporate into the ink mixture immediately prior to application (use within 4 hours)
Retardant	Cure retardant used to slow cure rate and extend pot life in hot climates or during long production runs	Incorporate retardant amount equal to 3% maximum of total ink weight to slow cure rate
Barrier Black-Parts A and B	Two-part ink system designed to prevent dye migration on sublimated polyester garments, and can greatly improve adhesion on difficult substrates	Once 80% of part A and 20% of part B are mixed, catalyze the ink and apply as a barrier layer over sublimated fabrics to prevent dye migration to upper layers (once parts A and B and catalyst are mixed, use the catalyzed solution within 4 hours)
Ready-for-use (RFU) Black	Premixed black silicone ink that is ready for use on its own	Mix with 3–5% catalyst and print
Ready-for-use (RFU) Matte White	White ink that is ready for use to produce a matte finish on performance fabrics	Mix with 3–5% catalyst and apply directly to garment or over the barrier black ink to produce white prints on sublimated fabrics



1.844.4AVIENT  
[www.avient.com](http://www.avient.com)



Copyright © 2020, Avient Corporation. Avient makes no representations, guarantees, or warranties of any kind with respect to the information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the information. Avient makes no warranties or guarantees respecting suitability of either Avient's products or the information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the information and/or use or handling of any product. AVIENT MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the information or products reflected by the information. This literature shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.