PA Series Poly-All Screen Inks have been designed specifically for screen printing on untreated polypropylene. PA Series performs satisfactorily on most polypropylene surfaces; however, since there is considerable variation in the formulation of substrate materials, the user must always pretest prior to a production run. PA Series exhibit a semi-gloss finish, and has very good flexibility. It has also proven successful in some pad printing applications.

**Substrates**
- Untreated polypropylene

Substrate recommendations are based on commonly available materials intended for the ink’s specific market when the inks are processed according to this technical data. While technical information and advice on the use of this product is provided in good faith, the User bears sole responsibility for selecting the appropriate product for their end-use requirements. Reference the ‘Quality Statement’ at the end of this document.

**User Information**

Mesh
230-305 tpi (90-120 tpcm) monofilament polyester mesh for most applications.

Stencil
Use direct emulsions and capillary films which are solvent resistant.

Squeegee
70-80 durometer polyurethane squeegee.

Coverage
Estimated 1,200-2,500 square feet (111 - 232 square meters) per gallon depending upon ink deposit.

Printing
Add only enough ink to the screen to be able to print for 5-10 minutes. Add additional ink in small increments throughout the print run to maintain screen stability. Thoroughly mix the ink prior to printing. Improper mixing can lead to inconsistent color and ink performance.

Maintain ink temperature at 65°-90°F (18°-32°C) for optimum print and cure performance. Lower temperatures increase the ink viscosity, impairing flow and increasing film thickness. Elevated temperatures lower the ink viscosity, reducing print definition and film thickness.

Pretest to determine optimum printing parameters for a particular set of ink, substrate, screen, press, and curing variables/conditions.

Nazdar does not recommend inter-mixing of PA Series with other inks.

**Pad Printing**

ADE Inks can be pad printed. The use of thinners or retarders may be required to achieve the correct transfer. Please follow the printing and drying guidelines.

**Drying Parameters**

PA Series air dries in 20 minutes or may be force dried in 15-25 seconds at temperatures from 90°F to 150°F (32°C to 66°C). Poly-All should “age” a minimum of 72 hours for maximum adhesion.

Good air circulation is necessary to remove the vaporized solvents. Multiple layers of ink may require longer drying times than a single layer.

**Clears / Varnishes**

*Mixing Clear /Metallic Mixing Clear:* Use PA01 Clear to reduce the density of colors or as a clear base for specialty additives such as Metallics.

**Common Performance Additives**

Any additives should be thoroughly mixed before each use. Prior to production, test any additive adjustment to the ink. Inks containing additives should not be mixed with other inks.

Example for additives: Ink at 100g with 8% of an additive is calculated as:

$$100g \text{ ink } + 8g \text{ additive } = 108g \text{ total}$$

*Reducer:* Use PA7 Thinner to reduce the viscosity of these inks. Add up to 15% by weight.

*Retarder:* Use PA8 to improve on screen stability. Add up to 5% by weight. For hot climate conditions or for slower drying, a blend of PA7 Thinner and PA8 Retarder can be used.

*Adhesion Promoter (additive):* Use 132661PA Polyall Adhesion Promoter to enhance adhesion. Add up to 5% by weight.
Adhesion Promoter (wipe on): Adhesion can also be increased by using 136579PA Polyall Wiping Solution. Wet rag with 136579PA, wipe the surface of the substrate, allow the 136579PA to dry, and then print onto the treated surface.

Leveling Agent: Use FP460 Flow Promoter to reduce pinholes/air bubbles present in the printed ink film. Add up to 3% by weight.

Cleanup
Screen Wash (Prior to Reclaim): Use IMS201 Premium Graphic Screen Wash, IMS203 Economy Graphic Screen Wash, or IMS206 Graphic Auto Screen Wash.


Similar products may be used.

Storage / Shelf Life
Store closed containers at temperatures between 65°-78°F (18°-25°C). Storing products outside of these recommendations may shorten their shelf life. Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

Standard PA Series items are useable for a period of at least 48 months from the date of manufacture. To obtain the official shelf life letter, Contact Nazdar Technical Service at InkAnswers@nazdar.com or see contact listing at the end of this document.

General Information

Ink Handling
All personnel mixing and handling these products must wear gloves and eye protection. Clean up spills immediately. If ink does come in contact with skin, wipe ink off with a clean, dry, absorbent cloth (do not use solvent or thinner). Wash the affected area with soap and water. Consult the applicable Safety Data Sheet (SDS / MSDS) for further instructions and warnings.

For assistance on a wide range of important regulatory issues, consult the following Regulatory Compliance Department link at www.nazdar.com or contact Nazdar Ink Technologies - World Headquarters (see contact listing at the end of this document).

Adhesion Testing
1. Touch of ink surface – the ink surface should be smooth.
2. Thumb twist – the ink surface should not mar or smudge.
3. Scratch surface – the ink surface should resist scratching.
4. Cross hatch tape test – per the ASTM D-3359 method, use a cross hatch tool or a sharp knife to cut through ink film only; then apply 3M #600 clear tape on cut area, rub down, and rip off at a 180 degree angle. Ink should only come off in actual cut areas.

Manufacturer’s Product Offering
Based on information from our raw material suppliers, these ink products are formulated to contain less than 0.06% lead. If exact heavy metal content is required, independent lab analysis is recommended.

Standard Printing Colors
Standard Printing Colors have excellent opacity over a variety of substrate colors.

High opacity colors have been formulated to achieve hard to match red, orange and yellow colors over dark substrates. PA701 Yellow, PA700 Orange and PA703 Red can be used as is or mixed with other PA colors to achieve opaque color matches.

Mixing Colors
The Mixing Colors are recommended for use in color matching. The higher pigment concentration of these colors provides stronger color saturation.

Special Effect Pigments
When special effect inks are to be printed, all ink layers must be evaluated for intercoat adhesion before proceeding with the production run. Pigments may settle in the container; mix the ink thoroughly prior to printing.

The following special effect pigments may be added to PA Series. Contact Nazdar for the item number(s) and availability of special effect products. Technical Data Sheets for each of the following special effect pigments can be found at www.nazdar.com.
Technical Data Sheet
Nazdar PA / Poly-All Series Screen Ink

Metallic Silver (aluminum): Add up to 8% by weight.

Metallic Gold (bronze): Add up to 15% by weight. Chemical reactions in metallic inks may result in viscosity, color and printability changes over time; due to this, mix only enough metallic ink to be used the same day.

Pearlescent / Interference: Add up to 20% by weight.

Multi-Chromatic: Add up to 10% by weight.

Phosphorescent: Add up to 40% by weight. Fluorescents: Add up to 25% by weight. Fluorescent colors fade quickly with exposure to ultraviolet light.

Packaging / Availability
Contact your Nazdar distributor for product availability and offering.

Standard Ink Items
Standard ink items listed below are packaged in kilogram and gallon containers.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Printing Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA01</td>
<td>Clear</td>
</tr>
<tr>
<td>PA10</td>
<td>White</td>
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<tr>
<td>PA11</td>
<td>Extra Opaque White</td>
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<tr>
<td>PA21</td>
<td>Yellow</td>
</tr>
<tr>
<td>PA26</td>
<td>Orange</td>
</tr>
<tr>
<td>PA30</td>
<td>Emerald Green</td>
</tr>
<tr>
<td>PA43</td>
<td>Royal Blue</td>
</tr>
<tr>
<td>PA46</td>
<td>Permanent Blue</td>
</tr>
<tr>
<td>PA49</td>
<td>Purple</td>
</tr>
<tr>
<td>PA52</td>
<td>Bright Red</td>
</tr>
<tr>
<td>PA53</td>
<td>Deep Red</td>
</tr>
<tr>
<td>PA54</td>
<td>Maroon</td>
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<tr>
<td>PA60</td>
<td>Brown</td>
</tr>
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<td>PA70</td>
<td>Black</td>
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<tr>
<td>PA700</td>
<td>Opaque Orange</td>
</tr>
<tr>
<td>PA701</td>
<td>Opaque Yellow</td>
</tr>
<tr>
<td>PA703</td>
<td>Opaque Red</td>
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<table>
<thead>
<tr>
<th>Item Number</th>
<th>Mixing Color</th>
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<tbody>
<tr>
<td>PA310</td>
<td>Green</td>
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<tr>
<td>PA440</td>
<td>Process Blue</td>
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<tr>
<td>PA450</td>
<td>Reflex Blue</td>
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<tr>
<td>PA500</td>
<td>Warm Red</td>
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<tr>
<td>PA510</td>
<td>Rubine Red</td>
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Additives / Reducers

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<tr>
<th>Item Number</th>
<th>Additives / Reducers</th>
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<tbody>
<tr>
<td>PA7</td>
<td>Thinner</td>
</tr>
<tr>
<td>PA8</td>
<td>Retarder</td>
</tr>
<tr>
<td>FP460</td>
<td>Flow Promoter</td>
</tr>
<tr>
<td>132661PA</td>
<td>Polyall Adhesion Promoter</td>
</tr>
<tr>
<td>136579PA</td>
<td>Polyall Wiping Solution</td>
</tr>
</tbody>
</table>

Cleaners / Clean Up

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Cleaners / Clean Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS201</td>
<td>Premium Graphic Screen Wash</td>
</tr>
<tr>
<td>IMS203</td>
<td>Economy Graphic Screen Wash</td>
</tr>
<tr>
<td>IMS206</td>
<td>Graphic Auto Screen Wash</td>
</tr>
<tr>
<td>IMS301</td>
<td>Premium Graphic Press Wash</td>
</tr>
</tbody>
</table>

Nazdar Quality Statement

Nazdar® stands behind the quality of this product. Nazdar® cannot, however, guarantee the finished results because Nazdar® exercises no control over individual operating conditions and production procedures. While technical information and advice on the use of this product is provided in good faith, the User bears sole responsibility for selecting the appropriate product for their end-use requirements. Users are also responsible for testing to determine that our product will perform as expected during the printed item’s entire life-cycle from printing, post-print processing, and shipment to end-use. This product has been specially formulated for screen printing, and it has not been tested for application by any other method. Any liability associated with the use of this product is limited to the value of the product purchased from Nazdar®.

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