



**SAPPHIRE Ink**  
**DP Series**  
**1-Part Pad Printing Ink**  
**Rev: SC-42612**

**General Overview:**

DP series is a specialty ink designed for printing on untreated polypropylene. It is a high gloss ink with excellent adhesion on most polypropylene substrates. The more virgin the substrate, the greater the adhesion without requiring pre-treatment. PP1 adhesion promoter can be added to the DP series ink to improve adhesion.

Substrates:

- Polypropylene

Typical Applications:

- Promotional Products
- Frisbees
- Syringes & Medical Devices
- Cosmetics
- Industrial Housings

**Mixing Preparation: 1 component ink**

**Hardeners:** DP Series inks cure by air drying.

**Solvent:** The ink should be adjusted to printing viscosity with 10% - 30% DP-M or MS solvent by weight. Adding solvent will make the ink less viscous and slower drying.

**Adhesion Improvement:** For “non-pure” polypropylene additional modifiers may be used to improve adhesion. Add PP1 Adhesion Modifier to ink up to 20% weight or pre-wipe substrate with PP Primer.

**Drying:** DP Series inks cure by air drying. It will be ready for overprinting in less than 60 seconds and will be dust dry in 20 minutes at room temperature. Complete cross-linking (full cure) of the inks is realized in 6-8 days at room temperatures. Dust dry and full cure conditions can be significantly accelerated by the application of heat.

**Retarder:** For fine prints, add MS, EB or S3 retarder in proportions not to exceed 40% by weight of solvent. Adding excess retarder may inhibit ink transfer from pad to substrate.



**Auxiliary Agents:**

<b>Pad Print Solvent:</b>	
<b>DP-M Solvent</b>	<b>(Fast)</b>
<b>DP-MS Solvent</b>	<b>(Slow)</b>
<b>Screen Print Solvent:</b>	
<b>SP-5 Solvent</b>	
<b>EB Solvent</b>	<b>(Low odor)</b>
<b>S3 Retarder</b>	<b>(Very slow)</b>
<b>PP1 Adhesion Promoter</b>	
<b>Liquid Primer PP</b>	
<b>Anti-Static Liquid S</b>	
<b>Anti-Static Paste E</b>	

**Process Colors:**

<b>DP 1080</b>	<b>Europa Yellow</b>
<b>DP 1081</b>	<b>Europa Magenta</b>
<b>DP 1082</b>	<b>Europa Cyan</b>
<b>DP 1083</b>	<b>Europa Black</b>

**Standard Colors:**

<b>DP 110</b>	<b>Lemon Yellow</b>	<b>DP 136</b>	<b>Violet</b>
<b>DP 111</b>	<b>Medium Yellow</b>	<b>DP 139</b>	<b>Reflex Blue</b>
<b>DP 115</b>	<b>Orange</b>	<b>DP 140</b>	<b>Bright Green</b>
<b>DP 120</b>	<b>Bright Red</b>	<b>DP 141</b>	<b>Dark Green</b>
<b>DP 121</b>	<b>Signal Red</b>	<b>DP 151</b>	<b>Dark Brown</b>
<b>DP 122</b>	<b>Carmine Red</b>	<b>DP 160</b>	<b>White</b>
<b>DP 124</b>	<b>Light Pink</b>	<b>DP 165</b>	<b>Black</b>
<b>DP 130</b>	<b>Light Blue</b>		
<b>DP 132</b>	<b>Ultra Blue</b>		
<b>DP 133</b>	<b>Dark Blue</b>		

**Mixing Colors:**

<b>DP 10</b>	<b>Lemon Yellow</b>
<b>DP 11</b>	<b>Dark Yellow</b>
<b>DP 12</b>	<b>Orange</b>
<b>DP 21</b>	<b>Signal Red</b>
<b>DP 22</b>	<b>Carmine Red</b>
<b>DP 25</b>	<b>Magenta</b>
<b>DP 27</b>	<b>Violet</b>
<b>DP 32</b>	<b>Blue</b>
<b>DP 40</b>	<b>Green</b>
<b>DP 60</b>	<b>White</b>
<b>DP 65</b>	<b>Black</b>
<b>DP 70</b>	<b>Transparent</b>

**High Density Colors:**

<b>DP 160 HD</b>	<b>White</b>
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**Metallic Colors:**

<b>Standard Metallic: (Pre-Mix)</b>		<b>Metallic Paste:</b>	
<b>DP 75RE</b>	<b>Pale Gold</b>	<b>DP B75</b>	<b>Pale Gold</b>
<b>DP 76RE</b>	<b>Yellow Gold</b>	<b>DP B76</b>	<b>Pale Rich Gold</b>
<b>DP 77RE</b>	<b>Bright Gold</b>	<b>DP B77</b>	<b>Bronze</b>
<b>DP 78RE</b>	<b>Rose Gold</b>	<b>DP B79</b>	<b>Silver</b>
<b>DP 79/050</b>	<b>Silver</b>		

**ICN ADDITIONAL SERVICES:**

**Mixing System Colors:** ICN offers a series of 12 basic colors and all formulations required to generate color shades in Pantone, HKS and the RAL scale. This system provides formulations by weight in an easy to use format for generation of custom colors in house. ICN provides pre-generated documentation of all popular numerical matching formulations including HKS and RAL formulations in electronic or preprinted format *for all ink series*. These formulations are provided at “no charge” as a service to our customers and are calculated for a white background.

**Color Matching Services:** The ICN color lab also provides custom computer generated color matching services at additional charge. Any popular numerical color formulations can be matched and verified for all surfaces with varying substrate color.

**Cleaning:** Wet or “at press” cleaning should be achieved using the auxiliary solvents specified in the Auxiliary Section of this technical data sheet. For general cleaning of ink cups, flood bars, Dr. blade assemblies, plates and print press components, ICN recommends the use of an appropriate “safety solvent” such as EBD solvent. These aggressive safety solvents contain no TLVS (Threshold Limit Values), are extremely effective and available from ICN.

**Ink Removal:** While our main mission as an ink provider is to “make it stick”, ICN offers a revolutionary new product called *Ink Away* to effectively remove misprints and allow re-processing of product. *Ink Away* will not harm plastic substrates and is effective in recovery from defective product!

**Printing Pads:** Successful decoration and print quality are heavily influenced by print pad selection. ICN manufactures the highest quality print pads available utilizing a proprietary high pressure process and can provide custom blended silicones that provide extended pad life and superior print quality. Our technicians are available to provide recommendations concerning pad selection and material types to compliment your decoration process.

**Storage:** Inks and solvents should be stored in a suitable “safe environment”, see local regulations. Shelf life for unopened inks is approximately two years under normal conditions (temperatures of 68 to 80 degrees F and humidity of 20-70%). Metallic colors, due to pigment composition, have a shelf life of 12 months. All unopened solvents have an indefinite shelf life.

**Packaging:** All color shades are packaged in standard 1kilogram containers. Optional 5 kilogram packaging is offered as “special order” for high volume users. Due to cost and restricted shelf life, metallic shades are offered in 1 kilogram and ½ kilogram packaging.



**Precautionary measures:** Please review all material safety data sheets for this and all products prior to use. The material safety data sheets have been compiled to indicate precautionary instructions regarding use, handling, storage, first aid measures and transportation for products used in the workplace. Please contact ICN with any technical questions regarding our products or to obtain additional MSDS information.