Whitepaper: New Pantone Formula Guide Base Inks

Pantone announced the expansion of the Pantone Matching System® color collection in December of 2022 with the exciting addition of 224 new colors. For this release, Pantone also replaced the base inks used in previous editions with modern environmentally friendly alternatives that are now compatible with post-print coatings.

About the 224 new colors

The new Pantone Colors fill gaps in our Pantone Matching System color gamut with more dark neutrals, greens, blues, and violets based on comments and feedback from the global design community.

What has changed?

The color appearance of existing Pantone Colors has not changed. Even though existing colors have been formulated with some new base inks, the resulting Pantone Color appearance is stable across viewing conditions, and consistent with the digital libraries available in most design and production software solutions, including Pantone Connect™ and PantoneLIVE™.

It is important to note that the existing Pantone digital values have not changed and the digital values for the 224 new colors have been added.

Base ink improvements

Pantone base inks as represented in the latest version of the Pantone Formula Guide and Color Bridge are eco-friendly, containing soy and other vegetable oils, with consideration for low migration of VOCs where indirect food contact might occur, no reportable levels of Proposition 65 substances, with no hazardous substances as defined by OSHA, the EU, and GHS.

The Pantone base inks are compatible with overprint varnishes, aqueous, and UV coatings. This is a key requirement for most packaging, label, and print applications.

Pantone now mixes all Pantone Colors from a total of only 11 base inks plus colorless extender, which can simplify ink matching and reduce inventory compared to the 18 base inks used previously.

Base ink properties

Below is a list of the Pantone base inks and related technical information:

Existing Base Inks	Guide Page	Pigment IDs	Common Pigment Names	CI Numbers
PANTONE Pink	1.1	PR-122	Quinacridone Magenta Y	73915
PANTONE Green	218	PG-7	Phthalo Green	74260
PANTONE Black	298	PK-7	Carbon Black	77266
PANTONE Process Blue	178	PB-15:3	Phthalo Blue	74160
PANTONE Warm Red	53	PR-48:1	Permanent Red 2B (barium)	15865:1
Note: Warm Red pigment has changed to meet new guide criteria - previously pigment was PR-53:1 Red Lake C (barium)				
PANTONE Rubine Red	73	PR-48:2	Pigment Red 2B (calcium)	15865:2
Note: Rubine Red pigment has changed to meet new guide criteria – previously pigment was PR-57:1 Lithol Rubine (calcium)				
New Base Inks				
PANTONE Orange 016	1.5	PO-16	Benzidine (Dianisidine) Orange R	21160
PANTONE Real Purple	1.5	PV-1	Rhodamine B (PTMA)	45170:2
Note: This base tends to fade and bleed so it is used only where a clean, bright purple is required				
PANTONE Violet v2	1.5	PV-23	Carbazole Violet	51319
PANTONE Yellow PY12	1.5	PY-12	Diarylide Yellow AAA	21090
PANTONE Purple v2	1.5	PR-122	Quinacridone Magenta Y	73915
		PV-23	Carbazole Violet	51319

<u>Legacy base inks</u>

Below is a list of former Pantone base inks that are no longer used by Pantone in formulating the Pantone Colors. They are printed in the new guides so customers can still refer to them if needed.

Legacy Base Inks	**Guide Page**	**Pigment IDs**	**Common Pigment Names**	**CI Numbers**
PANTONE Bright Red	1.1	PR-48:1	Permanent Red 2B (barium)	15865:1
PANTONE Dark Blue	1.1	PV-23 PB-15:3	Carbazole Violet & Phthalo Blue	51319 74160
PANTONE Medium Purple	1.1	PV-23	Carbazole Violet	51319
PANTONE Yellow 012	1.1	PY-13	Diarylide Yellow AAMX	21100
PANTONE Orange 021	27	PO-34	Diarylide Orange	21115
PANTONE Red 032	55	PR-112	Naphthol Red FGR	12370
PANTONE Rhodamine Red	77	PR-81	Rhodamine Y (PTMA)	45160:1
PANTONE Purple	98	PV-1 PR-81	Rhodamine B (PTMA)/ Rhodamine Y (PTMA)	45170:2 45160:1
PANTONE Violet	120	PV-3	Methyl Violet (PTMA)	42535:2
PANTONE Blue 072	154	PB-1:2	Victoria Blue SMA	42595:3
PANTONE Yellow	2	This color is now formulated from base inks as shown within guide		
PANTONE Reflex Blue	155	This color is now formulated from base inks as shown within guide		

<u>Pantone Ink Licensees</u>

Pantone partners with leading ink suppliers around the world to ensure printers and converters have access to inks in Pantone Colors that meet the criteria required for each print job. Developing these inks based on the Pantone Matching System is efficient and cost effective and provides designers with printed results that meet their color expectations. This full ecosystem, including the design community, print suppliers, and Pantone Ink Licensees, succeeds based on collective confidence in the renowned Pantone Matching System.

<u>Qualification of Ink Licensees</u>

Pantone Ink Licensees must meet Pantone criteria in successfully matching Pantone Colors with their licensed ink system. An annual evaluation process ensures that Ink Licensees demonstrate high quality in developing ink matches to Pantone Colors. Qualified Ink Licensees can make use of Pantone trademarks and intellectual property in advertising, proofing and labeling their ink offerings. Licensing the Pantone Matching System improves their marketability with printing companies, brands and designers, while providing a simplicity in the specification and delivery of inks.

<u>Changes in Ink Licensee Qualification</u>

With the introduction of a simplified set of Pantone base inks that better meet the needs of today's design, print and packaging markets, Pantone is also making some improvements in the Ink Licensee Qualification process. Historically, Pantone required Ink Licensees to develop high quality matches of the Pantone Base Inks *and* demonstrate the capability to utilize these base inks developing high quality matches to a sample of Pantone Matching System Colors.

Going forward, the annual qualification of Pantone Ink Licensees will be simplified. Pantone will require a sample of high-quality matches to the Pantone Matching System Colors. And while it is highly recommended, there is no longer a requirement to necessarily utilize base inks that strictly align to the Pantone Base Inks (now 11 bases).

This simplification will permit Pantone Ink Licensees to efficiently deliver Pantone Matching System colors across a wider variety of ink types and applications, which often require different base ink properties and colors. For designers and printers this further expands the utility of Pantone Colors.