

# PANTONE® colour matching system

Beside existing SCC colour matching system (System of Cinkarna Celje) of offset inks, also PANTONE® shades and basic inks are produced at Cinkarna Celje d.d.. PANTONE® system was launched in Cinkarna due to follow the demands of modern designing and printing. To the market PANTONE® system was introduced already in 1963. Today, the PANTONE® system is worldwide represented as a means of colour communication. Compared to other systems on the market, PANTONE® does not have the aim to illustrate one colour shade on different papers but to illustrate a standard ink formulation on different kinds of paper. Therefore, by the means of the system offered by PANTONE®, a worldwide colour communication is possible: e.g. PANTONE® 1235 C in Germany looks like PANTONE® 1235 C in Slovenia or in any other country in the world.



In order to work with the PANTONE® matching system 13 basic inks (+ black and transparent white); together 15 basic inks are needed. Basic inks are mixed according to the formulations from PANTONE® formula guide. It can be assumed that the colour shade in the middle of each page of the guide shows a starting mixture out of the basic inks. On the same page of the guide this mixture is shown in three gradations darker (adding black ink) and three gradations brighter (adding transparent white).

Pantone® - basic inks (Vegetable oil based inks)	Light fastness	Alcohol	Nitro	Alkali	Opacity	UV varnishable	Disp. varnishable	Film laminating
PANTONE® YELLOW	5	+	+	+	-	+	+	+
PANTONE® YELLOW 012	5	+	+	+	-	+	+	+
PANTONE® ORANGE 021	5	+	+	+	-	+	+	+
PANTONE® WARM RED	3	+	+	-	-	-	-	-
PANTONE® RED 032	6-7	+	+	+	-	+	+	+
PANTONE® RUBINE RED	5	+	+	-	-	~	~	~
PANTONE® RHODAMINE RED	4	-	-	-	-	-	-	-
PANTONE® PURPLE	4	-	-	-	-	-	-	-
PANTONE® VIOLET	4	-	-	-	-	-	-	-
PANTONE® BLUE 072C	5	-	-	-	-	-	-	-
PANTONE® REFLEX BLUE	3	-	-	+	-	-	-	-
PANTONE® PROCESS BLUE	8	+	+	+	-	+	+	+
PANTONE® GREEN	8	+	+	+	-	+	+	+
PANTONE® BLACK	8	+	+	+	+	+	+	+
PANTONE® MIXING WHITE		+	+	+	-	+	+	+

Legend: from 1-lowest to 8-highest light fastness / properties: + given / - not given / ~ limited

## IT IS GOOD TO KNOW

Despite the fact, that PANTONE® system is known as worldwide colour communication it is necessary to take into consideration following factors, which can influence on the shade differences. The tolerances from edition to edition of formula guide are up to +/- 5% in the density of each colour. Each formula guide has its limited shelf life of use (light influence, ageing).

- **Different printing surfaces:** different kinds and qualities of printing paper/surface can lead to a difference in observance of the colour shade with identical ink formulation.
- **Optical brighteners in papers - printing materials:** optical brighteners, which provides suitable brightness of certain papers and cardboards are not completely resistant to light influence and this can cause differences in the surface of printing material. Therefore, by ageing the surface of printing material is visually changing what influences also on appearance of colour shade, which can become yellowish and dirtier.
- **Ink layer thickness:** colour shades of PANTONE® guide have been printed with a very high ink layer thickness (more than 2 g/m<sup>2</sup>), which can often only roughly be achieved in regular/standard printing. If you want to achieve exact shade from formula guide, it should be printed twice or new special formulation for this shade should be made. Therefore with new special formulation in regular/standard printing with lower ink layer thickness (1,2 – 1,4 g/m<sup>2</sup>) the same effect can be achieved.
- **Light resistance:** the PANTONE® system is a pure means of communication and is not a colour standard. When colours with higher light fastness than regular are required, we suggest ordering them in our mixing unit in Cinkarna. Inks with requirement of higher light fastness are then formulated out of basic inks which have higher light resistance.
- **Fastness properties of inks:** if colour shades with certain resistance for certain finishing method are required, we suggest ordering them in our mixing unit in Cinkarna, where colour shades with higher resistance are provided.
- **Print finishing:** if the print product is later however, varnished or laminated, this may lead to changes in colour shades.
- **Differences between C and U:** as PANTONE® prints the same formula on different kinds of paper the colour shade also looks different.
- **Special colour shades:** on requirement, we can make any colour shade according to the sample. When ordering special colour shade it is necessary to define printing material (coated or uncoated).

