

NPC COLOR

# NPC COLOR

*Chips Color  
for PU*



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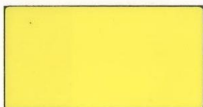





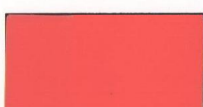


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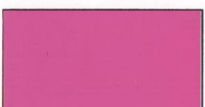





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- NPC商品名中之顏色名全面改為英文大寫。
- The color name in NPC color will be changed to capitalized.

Full	Tint	NPC Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>
		Yellow 9K453 PY-184	7	6	5	5	5	5	2
		Yellow 9K454 PY-184	7	6	5	5	5	5	2
		Yellow 9K192 PY-138	7	6	4-5	4	5	5	5
		Yellow 9K327 PY-139	6-7	6	5	4	5	4	5
		Orange 9K455 PO-64	7	6	4-5	5	5	5	2
		Orange 9K371 PO-38	7	5	4	4	5	5	5
		Red 9K025 PR-254	7	7	5	5	5	5	5

Full	Tint	NPC Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>
		Red 9K287 PR-208	6	5	4-5	4-5	5	5	5
		Red 9K135 PR-185	7	6	4-5	5	5	5	5
		Red 9K289 PV-19	7	6	5	5	5	5	5
		Red 9K290 PR-122	7	6	5	5	5	5	5
		Red 9K451 PR-221	6-7	5-6	5	5	5	5	5
		Bordeaux 9K468 PV-19	6	6	5	5	5	5	5
		Violet 9K298 PV-23	7	5	5	4	5	5	5



Full	Tint	NPC Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>
		Violet 9K149 PV-15	6	6	5	5	2	5	5
		Brown 9K296 PR-101	7	6	5	5	5	5	5
		Brown 9K297 PBr-25	7	6	5	5	5	5	5
		Blue 9K450 PB-15:4	7	6	5	5	5	5	5
		Blue 9K333 PB-15:3	7	6	5	5	5	5	5
		Blue 9K332 PB-15:3	7	6	5	5	5	5	5
		Blue 9K123 PB-29	6-7	6-7	5	5	2	5	5

Full	Tint	NPC Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>
		Green 9K299 PG-7	6-7	6	5	5	5	5	5
		White 9K354 PW-6	7	7	5	5	5	5	5
		White 9K469 PW-6	7	6-7	5	5	5	5	5
		Black 9K099 PBk-7	8	6	5	5	5	5	5
		Black 9K302 PBk-7	8	6	5	5	5	5	5
		Black 9K305 PBk-7	8	6	5	5	5	5	5
		Black 9K351 PBk-7	8	6	5	5	5	5	5

# NPC Color

## 1. Introduction

NPC Colors are excellent processed pigment in flake developed for polyurethane leather (synthetic leather) through our research and experience in the field of fine chemical industry.

NPC Colors are characterized in that they are readily soluble in a medium for about five to ten minutes.

## 2. Characteristics

- Long storage life
- Easy in color matching
- Excellent in solubility and improvable in operation efficiency thereby
- Stable in quality
- Clear and brilliant shade
- Stable in viscosity
- High transparence

Having above-mentioned excellent properties, NPC Colors may contribute to the rationalization of your manufacturing process

## 3. Data of color sheet

- Compound
 

PU Resin (solid content 35 %)	100
MEK	65~80
Viscosity (cps)	2000~2500
- Full Shade

	Organic	Inorganic	Black	White
Compound	100	100	100	100
NPC Color	3.0	5.0	2.0	10.0

### (c). Tint Shade

	Organic	Inorganic	Black	White
Compound	100	100	100	100
NPC Color	1.0	2.0	1.0	10.0
NPC WH 9K354	4.0	4.0	4.0	---
NPC BK 9K351	---	---	---	0.2

### (d).Sheeting Data

Top Skin coating (thickness) : 0.18~0.2  
Drying Temperature(Drying Oven) : 120°C

## D. Test Method :

### 1.) Light fastness

The test sheet is carried out for a specified Period in a Fade-O-Meter. Assessments were made using the 1 to 8 blue scales so as to the degree of their fading and discoloration.

Grade	Blue scale	Fade-O-Meter Full exposure
8	Outstanding	400 hours
7	Excellent	200 hours
6	Very good	100 hours
5	Good	50 hours
4	Fair	25 hours
3	Moderate	12 hours
2	Poor	6 hours
1	Very poor	3 hours

### 2.) Migration Test

The test sheet is sandwiched between two white sheets and placed for 24 hours under a load of about 100 g/c m<sup>2</sup> and kept at a constant temperature of 80 °C . The fastness of migration was judged by the extend of staining of the white sheet and assessed on 1 to 5 scale. Rating 5 denotes a pure white.

Rating	Staining of white sheet	Migration resistance
5	No staining	Very good
4	Trance	Good
3	Weak	Fairly good
2	Appreciable	Moderate
1	Heavy	Poor

### 3.) Heat resistance

Test color sheet was left in a gear-oven for 30 minutes at 180°C ± 2°C .The change of shade is assessed on a 1 to 5 scale .

Rating	Shade of test samples	Heat resistance
5	Unchanged	Very good
4	Trance changed	Good
3	Slightly changed	Fair good
2	Considerably changed	Moderate
1	Severely changed	Poor



# INTROODUCTION OF

## NPC COLOR

The hue, color strength, physical properties and cost are the major factors when we select the color for PU synthetic leather. The following is the basic colors of NPC Color.

### 1. Yellow —

(A) Inorganic colors complying with EN-71 Part: 3.

(1) NPC Yellow 9K453

(2) NPC Yellow 9K454

a.) The color will turn dark when the above items have any contact with Sulfur (S). Therefore, any applications which may have contact with Sulfur should be avoided .

b.) Good hiding power, but the tinting strength and brightness are worse than organic Yellow.

c.) NPC Yellow 9K454 is more reddish than NPC Yellow 9K453.

(B) Organic Colors:

(1) NPC Yellow 9K192

(2) NPC Yellow 9K327

They have excellent heat resistance, light fastness, and good resistances to migration and the solvents.

### 2. Orange —

(A) Inorganic Colors: NPC orange 9K455

The properties are similar to the inorganic yellow. The hiding power is good but resistance to Sulfur is bad. The color will turn dark when it contacts with Sulfur ( S ). Any application that may contact with Sulfur should be avoided.

(B) Organic Colors: NPC Orange 9K371

It is Naphthol AS pigment made. Good light fastness (Blue scale 6-7) but the hiding power is not good (more transparent) and more expensive. Due to good brightness, they are widely used in coloring transparent products and finishing printing for PU and PVC leathers.

### 3. Red —

(A) All made of Organic pigments. It is the most difficult task to select a proper red to obtain both good properties and cheap price at the same time. Generally speaking, reds with good properties are always more expensive . Therefore, when selecting a proper Red for production at the economical cost, a fully understanding of the color properties and the requirements of products are needed.

(1) NPC Red 9K025

(2) NPC Red 9K135

(3) NPC Red 9K287

(4) NPC Red 9K289

(5) NPC Red 9K290

(6) NPC Red 9K451

(7) NPC Bordeaux 9K468

Above items are made of high-class organic pigments. They have excellent light fastness and heat resistance.

### 4. Brown —

(A) Inorganic Colors:

NPC Brown 9K296 is made of  $\text{Fe}_2\text{O}_3$ . The resistances to heat and weather are excellent. Besides, the price is low. The only weakness is the fair solvent-resistance. Although the properties are not stable enough as time goes by, it is still widely used.

(B) Organic Colors:

NPC Brown 9K297 is made of a high-grade Organic pigment and is good for transparent products. The heat resistance and light fastness are excellent. Although it is expensive, the properties are stable.



## 5. Violet —

- (1) NPC violet 9K298 is made of a high-class Organic pigment with excellent heat resistance and light fastness. The solvent resistance is fair and it may cause the release paper being contaminated in case of high dosage in the composition. Due to high brightness, the mixture of red and blue colors cannot substitute it.
- (2) NPC violet 9K149 is Ultramarine Violet. For whitening.

## 6. Blue —

The major blue pigments are Ultramarine Blue and Phthalocyanine Blue. Owing to the poor acid resistance of Ultramarine Blue, it is not commonly used for PU leather coloring.

- (1) NPC Blue 9K332 is a reddish blue which is widely used .
- (2) NPC Blue 9K333 is a greenish blue which is also widely used .
- (3) NPC Blue 9K450 has a similar shade to NPC Blue 9K333, it was developed to solve the problem of color deviation after coloring as time goes by. Among similar products, it has the best stability after coloring.
- (4) NPC Blue 9K123 is Ultramarine Blue. For whitening

## 7.Green —

NPC Green 9K299 is made of Phthalocyanine Green. The properties are similar to Phthalocyanine Blue that is excellent in heat resistance and light fastness. There are bluish and yellowish color shades for Options. Green 9K299 is the yellowish one with excellent brightness for color matching .

## 8. White —

TiO<sub>2</sub> is the most popular white pigment, while Zinc white and Lead white are seldom used because of poor hiding power. TiO<sub>2</sub> are classified into A type and R type. A type is whiter but its hiding power, heat resistance and light fastness are worse, so it is not good for the application to PU leather coloring. As to adapt R type TiO<sub>2</sub> for PU leather coloring, especially for matching snow-white color, we had best to find the whitest one and add some violet or blue colors to get it.

- (1) NPC white 9K354 : the most commonly used white color with good stability.
- (2) NPC white 9K469 : is suitable for snow-white color.

## 9. Black —

Carbon black is the most commonly used black pigment. Most Carbon black is made by Furnace process, while less Carbon black is made by Channel process (the higher grade) because of the pollution during production and difficult dispersion. The adding volume of Carbon black has limitation in the composition. Good blackness comes from the fine selections of pigment and resin.

- (1) NPC Black 9K099 has fair blackness and high color strength which is suitable for color matching .
- (2) NPC Black 9K302 has fair blackness and high color strength which is suitable for color matching .
- (3) NPC Black 9K305 is suitable for High Frequency process .
- (4) NPC Black 9K351 has excellent blackness which is suitable for various high-jetness products .



# NPC COLOR 簡介

PU 合成皮色料之選用，應考慮其色相、濃度、物性，以及價格，除此之外，為順應上游客戶特殊環保要求，如不含有機錫、甲苯.....或其他毒性物，茲就本公司 NPC Color 之基本色，逐一簡單介紹如下：

## 1. 黃色系列(Yellow)：

### (A) 非重金屬之無機色料：

(1) NPC Yellow 9K453

(2) NPC Yellow 9K454

a. 遇硫(S)會產生  $\text{Bi}_2\text{S}_3$  而變黑棕，故在使用此種色料應避免與含硫物一起使用。

b. 遮蓋力好，其著色力，鮮艷度較有機黃色色料差。其中以 NPC Yellow 9K454 最紅，NPC Yellow 9K453 為中黃。

### (B) 有機色料：

(1) NPC Yellow 9K192

(2) NPC Yellow 9K327

使用於無毒，不含 DCB 之製品，為較高級黃色色料。

## 2. 橙色系列 (Orange)

### (A) 無機色料：

NPC Orange 9K455

與無機黃色相同，但遮蓋力好，耐硫性差，需選擇性使用。

### (B) 有機色料：

NPC Orange 9K371

為 酚類(Naphthol AS)耐光性優(約 7~6 級)但遮蓋力不佳(即較透明)且價格較貴。因色澤鮮艷，一般用在透明產品或改色之印刷。

## 3. 紅色系列(Red)：

(A) 所介紹紅色色料，均為有機顏料，紅色顏料之選擇使用為複雜。一般要選物性好又價格便宜是比較困難。通常物性較好之紅色，其價格較貴，價格便宜之紅色其物性又不好。因此在選用紅色色料前必須先瞭解各種色料之特性，配合製品之需求，就可節省成本又可製造優良製品。

### (B) 有機紅色顏料：

(1) NPC Red 9K025

(2) NPC Red 9K135

(3) NPC Red 9K287

(4) NPC Red 9K289

(5) NPC Red 9K290

(6) NPC Red 9K451

(7) NPC Bordeaux 9K468

以上產品均為高級紅色顏料所製造，對於產品之耐熱性、耐候性及耐化學藥品性等之物性均優良。

## 4. 棕色系列(Brown)：

### (A) 無機色料：

NPC Brown 9K296 屬鍛燒氧化鐵( $\text{Fe}_2\text{O}_3$ )產品，因其為鍛燒顏料故耐熱性、耐候

性均優，又價格低廉，唯一缺點是在溶劑中之化學安定性較差，即 Coloring 後經時穩定性較差，但仍被廣泛使用。

(B)有機色料：

NPC Brown 9K297 為高級合成顏料製品，欲製透明製品可選用。除耐熱性、耐光性優良外，其 Coloring 後經時穩定性亦佳，缺點為價格較高。

5. 紫色系列(Violet)：

(A) NPC Violet 9K298 為高級合成顏料製品。耐光、耐熱性均優，耐溶劑性略差，故高著色量時應注意會有輕微之離型紙污染（一般著色量不會），其鮮艷程度，無法用紅色與藍色來調配。缺點為耐溶劑弱，高著色量時，會有輕微離型紙污染。

(B) NPC Violet 9K149 為群紫，調色增白用。

6. 藍色系列(Blue)：

主要藍色色相苯二甲藍素顏料 (Phthalocyanine Blue)，本公司產品均用苯二甲藍素顏料中之  $\beta$  型製造產品。

(A) NPC Blue 9K332：此色色相偏紅味，被廣泛使用。

(B) NPC Blue 9K333：一般色，色相帶綠味，亦被廣泛使用。

(C) NPC Blue 9K450：此色色相與 NPC Blue 9K333 相近是為解決 PU 業者因 Coloring 後經時變色，所帶來的困擾，而推出產品。此色之優點為 Coloring 後經時穩定性最佳，市售藍色均不及此色效果。

(D) NPC Blue 9K123 為群青，調色增白用。

7. 綠色系列(Green)：

NPC Green 9K299 為 Phthalocyanine Green 其性質與 Phthalocyanine Blue 相當，耐候、耐均優。市售綠色有帶青味及黃味二種，本公司產品 NPC Green 9K299 帶黃味品，在調配色上及鮮艷度甚為優良。

8. 白色系列(White)：

白色顏料以二氧化鈦( $\text{TiO}_2$ )使用最多，其他鋅白、鉛白等因隱蔽力差，較少使用。需要雪白產品時，必須選用最白的色料調紫色及藍色而成。

(A) NPC White 9K354：一般常用 R-Type 白色，Coloring 後穩定性佳。

(B) NPC White 9K469，雪白用。

9. 黑色系列(Black)：

黑色系列大部份為碳黑(Carbon Black)，一般常用為爐法製造之爐黑(Furnace)為多，而較高級之槽黑(Channel)因分散較難，且生產時污染產量逐漸減少。碳黑之添加量有某種程度之極限，若要求艷黑時應從色料的選擇著手，或展色之樹脂選擇著手。

(A) NPC Black 9K099：一般黑，色濃度高，可使用於配色。

(B) NPC Black 9K302：一般黑，色濃度高，可使用於配色。

(C) NPC Black 9K305：適合於高週波貼合加工。

(D) NPC Black 9K351：黑度佳，適於製造各種艷黑產品。