

NPB Color

I. 序文(Introduction)

這是混合顏料、樹脂、可塑劑所製成的板狀色料，它具有穩定可迅速分散、不沾手、易計量等優點，因此它是軟質 PVC 最適當之著色劑。

II. 特性(Characteristics)

1. 可長久儲存
2. 調配色容易
3. 性質穩定
4. 分散性佳
5. 計量容易，不飛揚
6. 不沾手

III. 展色片(Data of Color Sheet)

1. 組成(PVC Compound)

PVC 樹脂(Resin)	: 100.0
可塑劑(Plasticizer)	: 40.0
CaZn 安定劑(Stabilizer)	: 2.5

2. 濃色(Full Shade)

Color	有彩色	白色	黑色
PVC 組成	100	100	100
NPB Color	1	4	0.5

3. 淡色(Tint Shade)

Color	有彩色	白色	黑色
PVC 組成	100	100	100
NPB Color	1	4	0.5
NPB WHITE 839N	4	-	4
NPB BLACK 935N	-	0.04	-

IV. 試驗方法

1. 耐光試驗

將試片置放於 Fade-O-Meter 中照射，以小時計數其結果，對照 Blue Scale 1~8 之級數，判斷耐光程度優劣。

2. 耐熱試驗

將試片置於烘箱中 $180^{\circ}\text{C} \times 30$ 分鐘，區分 1-5 等級判斷耐熱程度。

3. 色移行試驗

將試片夾於兩片白色色片之間，置於烘箱 80°C ，加壓 $100\text{g}/\text{cm}^2$ ，24 小時，觀察白色色片移行現象，區分 1-5 等級判斷色移行程度。(Compound: 80 PHR-可塑劑)

4. 耐酸鹼試驗

將試片浸於 5% HCl 或 10% NaOH，24 小時，其優劣區分 1-5 等級。

5. 耐硫試驗

將試片浸於 10% $\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O}$ ，24 小時其變色優劣程度區分 1-5 等級。

以上所列物性資料為典型試驗數據，不做為產品規格及保證使用。

NPB Color

I. Introduction

This is a platelike coloring agent processed from pigment, resin and plasticizer. It shows excellent qualities such as stability, easy dispersion, metering, and it does not soil the users hands, therefore it is an ideal coloring agent for flexible PVC.

II. Characteristics

1. Long shelf life.
2. Easy color matching.
3. Stability.
4. Excellent dispersion.
5. Easy metering, minimum dusting
6. Does not soil hands.

III. Data of Color Sheet

1. PVC Compound

PVC Resin	: 100.0
Plasticizer	: 40.0
Stabilizer	: 2.5

2. Full Shade

Color	With color	white	black
PVC compound	100	100	100
NPB Color	1	4	0.5

3. Tint Shade

Color	With color	white	black
PVC compound	100	100	100
NPB Color	1	4	0.5
NPB WHITE 839N	4	–	4
NPB BLACK 935N	–	0.04	–

IV. Test Method

1. Light Fastness

The test sheet is carried out for a special period in a Fade-O-Meter Assessments were made using the 1 to 8 Blue Scale so as to the degree of their fading and discoloration.

2. Heat Resistance

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

3. Migration Test

The test sheet is sandwiched between two white sheets and placed for 24 hours under a load about 100 g/cm² and kept at a constant temperature of 80°C. The fastness of migration was judged by the extent of staining of the white sheet and assessed on 1 to 5 scale. Rating 5 denote pure white.

4. Chemical Resistance

Test color shade was dipped in 5% HCl or 10% NaOH for 24 hours change of shade is assessed on a 1 to 5 scale.

5. Sulfur Resistance

Test color shade was dipped in 10% Na₂S • 9H₂O for 24 hours change of shade is assessed on a 1 to 5 scale.

The above data and results are based on controlled or lab work and must be confirmed by buyer by testing for the intended conditions of use.

NPB Color(色餅)說明書

PVC(聚氯乙稀)是種價格合理、加工容易，在於不同添加劑配合後，可生產不同特性產品，適用多種用途之塑膠。

NPB color 則是適用軟質、半軟質 PVC 膠膜、膠布之著色劑，茲就本公司 NPB color 基本色之特性，逐一介紹如下：

1. 黃色系列：

(A)無機顏料

- (1)NPB YELLOW 130N：色相為檸檬黃
- (2)NPB YELLOW 131N：色相為中黃
- (3)NPB YELLOW 132N：色相偏紅味

以上三種均為鉻黃製品(Chrome Yellow)，其成分為 PbCrO_4 、 PbSO_4 ，屬含鉛顏料，因此遇硫(S)易產生 PbS 而變黑，故使用時應注意下游加工業的用途，另鉛乃屬重金屬，亦不適用於無毒加工製品。

(B)有機顏料-一般級色料

- (1)NPB YELLOW 133N：色相偏紅味
- (2)NPB YELLOW 134N：色相為檸檬黃
- (3)NPB YELLOW 3P053：色相為中黃

以上色料為一般級色料，價格便宜，但其物性較差，適於高著色量及室內製品使用。

◎有機顏料-中高級色料

- (1)NPB YELLOW 3A863N：色相為檸檬黃
- (2)NPB YELLOW 3A760N：色相為檸檬黃
- (3)NPB YELLOW 3A781N：色相偏紅味
- (4)NPB YELLOW 3B136N：色相偏紅味

以上色料為中高級色料，物性較佳，適於淺色系調色及室外製品用之，價格較貴，但依加工製品品質觀點，亦是值得！

2. 橙色系列：

(A)無機顏料

- (1)NPB ORANGE 333N：色相為原橙
- (2)NPB ORANGE 334N：色相偏赤味
- (3)NPB ORANGE 335N：色相偏黃味

此為鉬紅(Molybdate Orange)製品，成分為 PbCrO_4 、 PbMoO_4 、 PbSO_4 ，其物性與鉻黃相似，不適用加硫及無毒製品加工。

(B)有機顏料

- (1)NPB RED 3A008N：色相偏赤味
- 此色料鮮豔度及透明度較無機顏料佳。

3. 紅色系列：

紅色顏料均屬有機色料，依其物性區分為一般級及中高級品，視所需加工物性選擇用之。

(A)一般級色料

- (1)NPB RED 339N：色相偏橙味
- (2)NPB RED 430N：色相偏橙味
- (3)NPB RED 435N：色相偏黃味
- (4)NPB RED 433N：色相介於黃藍味
- (5)NPB RED 436WN：色相偏藍、耐水性佳
- (6)NPB RED 437N：色相偏藍、耐水性佳
- (7)NPB RED 533N：色相最藍味

以上色料為一般級色料，價格便宜，但其物性較差，適於高著色量及室內製品使用。

(B)中高級色料

- (1)NPB RED 3B030N：色相偏橙味
- (2)NPB RED 3A002N：色相帶藍味
- (3)NPB RED 3B244N：色相偏黃
- (4)NPB RED 439N：色相偏藍味
- (5)NPB RED 432EN：色相帶紫味
- (6)NPB RED 3A083N：色相偏清紫
- (7)NPB BORDEAUX 535N：色相暗紫

以上色料為中高級色料，物性較佳，適於淺色系調色及室外製品用之，價格較貴，但依加工製品品質觀點，亦是值得！

4. 棕色系列：

- (1)NPB BROWN 537RN：色相偏黃味
- (2)NPB BROWN 538N：色相偏藍味

此為無機顏料，其耐候性、耐熱性佳之色料，其成分為 Fe_2O_3 ，也因是氧化鐵之原故，使用於 PVC 中，特別要注意一點，其加工溫度不宜過高(180℃以上)易產生氯化鐵(FeCl_3)而促進 PVC 裂解需慎之！

5. 紫色系列：

(1)NPB VIOLET 3A164N：屬一般紫色顏料

(2)NPB VIOLET 3A100N：屬高級紫色顏料

紫色顏料為高級合成顏料，其耐熱、耐光性佳，在於白色系製品，微量添加有增白效果，一般紫色顏料皆有色移行(Migration)現象，如 3A164N，故紫色加工品應隔離存放，欲克服紫色色移行現象，推薦使用 3A100N。

6. 藍色系列：

(A)無機顏料

(1)NPB BLUE 635N：色相偏紫味

此顏料一般稱之為群青(Ultramarine Blue)屬鍛燒顏料，其耐熱、耐候性優，是用於淺色系 Blue、透明膠膜、增白調色使用，其缺點在於著色力低、耐酸性較差。

(B)有機顏料

(1)NPB BLUE 639N：色相偏紅味， α 型

(2)NPB BLUE 730N：色相偏紅味， α 型

(3)NPB BLUE 734N：色相偏綠味， β 型

(4)NPB BLUE 736N：色相偏綠味， β 型

此四色皆屬 Phthalocyanine Blue，此顏料分為 α 型偏紅味及 β 型偏綠味，依其物性 β 型較 α 型安定，故使用時應考慮加工過程中耐熱因素，選擇用之。

7. 綠色系列：

(1)NPB GREEN 832N：色相偏黃味

此顏料屬 Phthalocyanine Green，其性質與 Phthalocyanine Blue 相近，其耐熱、耐候性均優，適於鮮綠色調色。

8. 白色系列：

(1)NPB WHITE 838N：A 型

(2)NPB WHITE 839N：R 型

以上屬二氧化鈦(TiO_2)顏料，二氧化鈦分 A 型及 R 型兩種，A 型較白但遮蔽力、耐光、耐熱較 R 型差，故應依加工製品之物性條件，選擇 A 型或 R 型用二氧化鈦。

9. 黑色系列：

(1)NPB BLACK 3A025N：低級品

(2)NPB BLACK 3003N：低級品

(3)NPB BLACK 935N：中級品

(4)NPB BLACK 937N：中高級品

(5)NPB BLACK 8113N：高級品

一般黑色顏料為碳黑(Carbon Black)，其分類為低、中、高級品做選擇使用。

低級碳黑：用於一般黑度之純黑加工製品及底料用

中級碳黑：用於調色及一般黑度之純黑加工製品

高級碳黑：用於高黑度之純黑加工製品

10. 螢光系列：

螢光顏料是染料顏料化之物，物性較一般顏料差，且耐光性差是螢光色的通病，故在耐熱性上區分級別

(A)一般級螢光色：用於較低溫成形之製品，如 film sheets

(1)NPB PINK 3P351

(B)耐熱級螢光色：可用於較高溫之成形製品，如 sponge leather

(1)NPB YELLOW 3A404N

(2)NPB YELLOW 3P297P

(3)NPB ORANGE 8181N

(4)NPB PINK 3P493

(5)NPB PINK 3A438N

(6)NPB GREEN 3A437N

Introduction of NPB Color

PVC is an inexpensive, easily processed plastic, which through different combination and additions, can produce a wide variety of products.

NPB color is a coloring agent suitable for flexible and semirigid PVC leather tape. The qualities of our NPB colors are described below :

1. Yellow Series :

(A)Inorganic Pigment

- (1)NPB YELLOW 130N : Lemon yellow hue
- (2)NPB YELLOW 131N : Medium yellow hue
- (3)NPB YELLOW 132N : Reddish hue

The above are all Chrome yellow products, their components PbCrO_4 、 PbSO_4 are lead containing pigment, which produce PbS and darken when they come in contact with sulfur, therefore special attention must be paid to downstream processing. Because lead belongs to the heavy metal group, it is unsuitable for non-toxic product.

(B)Organic Pigment-General Grade

- (1)NPB YELLOW 133N : Reddish hue
- (2)NPB YELLOW 134N : Lemon yellow hue
- (3)NPB YELLOW 3P053 : Medium yellow hue

The above are general grade coloring agent. They are relatively inexpensive, but have poor weather resistance, therefore they are suitable for deep color series and products for indoor use.

©Organic Pigment -Medium and High Grade

- (1)NPB YELLOW 3A863N : Lemon yellow hue
- (2)NPB YELLOW 3A760N : Lemon yellow hue
- (3)NPB YELLOW 3A781N : Reddish hue
- (4)NPB YELLOW 3B136N : Reddish hue

The above are medium and high grade coloring agent. They show excellent light and heat resistance qualities, and are suitable for light color series and products for outdoor use. Although slightly more expensive, the high quality results are well worth it.

2. Orange Series :

(A)Inorganic Pigment

- (1)NPB ORANGE 333N : Original orange hue
- (2)NPB ORANGE 334N : Reddish hue
- (3)NPB ORANGE 335N : Yellowish hue

The above are Molybdate Orange product, their components PbCrO_4 、 PbMoO_4 、 PbSO_4 . Their physical properties are similar to those Chrome Yellow, and are not suitable for use with sulfur and non-toxic products.

(B)Organic Pigment

- (1)NPB RED 3A008N : Reddish hue

This coloring agent has better brightness and transparency than inorganic pigments.

3. Red Series :

All red pigments are organic coloring agents, and can be divided into general grade and medium high grade products according to their physical properties.

(A)General Grade

- (1)NPB RED 339N : Orangish hue
- (2)NPB RED 430N : Orangish hue
- (3)NPB RED 435N : Yellowish hue
- (4)NPB RED 433N : Between orangish and bluish
- (5)NPB RED 436WN : Bluish hue, water resistance
- (6)NPB RED 437N : Bluish hue, water resistance
- (7)NPB RED 533N : Most bluish

The above are general grade coloring agent. They are relatively inexpensive, but have poor weather resistance, therefore they are suitable for deep color series and products for indoor use.

(B)Medium and High Grade

- (1)NPB RED 3B030N : Orangish hue
- (2)NPB RED 3A002N : Bluish hue
- (3)NPB RED 3B244N : Yellowish hue
- (4)NPB RED 439N : Bluish hue
- (5)NPB RED 432EN : Purplish hue
- (6)NPB RED 3A083N : Violet hue
- (7)NPB BORDEAUX 535N : Dark purplish hue

The above are medium and high grade coloring agent. They show excellent light and heat resistance qualities, and are suitable for light color series and products for outdoor use. Although slightly more expensive, the high quality results are well worth it.

4. Brown Series :

- (1)NPB BROWN 537RN : Yellowish hue
- (2)NPB BROWN 538N : Bluish hue

Inorganic pigments are products of excellent weather and heat properties. Their components are Fe_2O_3 , because of ferric oxide, special attention must be paid to processing temperature when using in PVC. Temperature over 180°C easily produces FeCl_3 and cause degradation PVC.

5. Violet Series :

- (1)NPB VIOLET 3A164N : General grade
- (2)NPB VIOLET 3A100N : High grade

Violet pigments are high grade synthetic products of good heat and light resistance qualities. When a minute amount is added to white series, a whitening effect may be achieved. Most violet pigments will show migration, such as 3A164N, therefore violet colored products must be separately stored. To overcome migration, our company recommends 3A100N.

6. Blue Series :

(A)Inorganic Pigment

- (1)NPB BLUE 635N : Purplish hue

This pigment is usually called Ultramarine Blue, belonging to the baking pigment series. It displays excellent heat and weather resistance qualities, therefore and its suitable for light blue series, transparent film, whitening. Its disadvantage is that it has poor covering strength and acid resistance.

(B)Organic Pigment

- (1)NPB BLUE 639N : Reddish hue , α type
- (2)NPB BLUE 730N : Reddish hue , α type
- (3)NPB BLUE 734N : Greenish , β type
- (4)NPB BLUE 736N : Greenish , β type

These four colors belong to the Phthalocyanine Blue family, and may be divided into α type and β type. β type is more stability, therefore the factor of heat resistance must be noted during processing.

7. Green Series :

- (1)NPB GREEN 832N : Yellowish hue

This pigment is a Phthalocyanine Green product, with qualities similar to Phthalocyanine Blue. It has excellent heat and weather resistance properties and is suitable for the matching of bright green colors.

8. White Series :

- (1)NPB WHITE 838N : A type
- (2)NPB WHITE 839N : R type

The above are TiO_2 pigment, and are divided into A type and R type. A type is whiter but also less of covering strength, light and heat resistance than R type, therefore choose pigment type according to processing needs.

9. Black Series :

- (1)NPB BLACK 3A025N : Low grade
- (2)NPB BLACK 3003N : Low grade
- (3)NPB BLACK 935N : Medium grade
- (4)NPB BLACK 937N : Medium high grade
- (5)NPB BLACK 8113N : High grade

General black pigment are carbon black and are separated into low to high grades.

Low grade : Used for back layer products that do not necessarily have to be bright black

Medium grade : Used for color matching.

High grade : Used for product which require jet black.

10. Fluorescent Series :

Fluorescent pigments are pigmented dyes. Its physical properties are inferior to ordinary pigments. Poor light resistance is one of its disadvantage, therefore grading depends on the difference in heat resistance.

(A)Common use Fluorescent Pigments : Used for low temperature processing, such as film sheets.












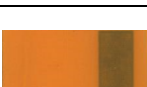


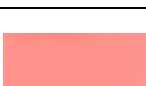
- (1)NPB PINK 3P351

(B)Heat Resistance Grade Fluorescent Pigments :


Used for products of higher processing temperature such as sponge sheet.

- (1)NPB YELLOW 3A404N
- (2)NPB YELLOW 3P297P
- (3)NPB ORANGE 8181N
- (4)NPB PINK 3P493
- (5)NPB PINK 3A438N
- (6)NPB GREEN 3A437N

大恭化學 NPB Color 產品目錄

Full Shade	Tint Shade	Color Name NPB	Light Fastness	Heat Resistance	Migration	Chemical Resistance		
			Full Tint			5% HCl	10% NaOH	10% NaS · 9H ₂ O
		YELLOW 130N PY-34	5-6 5-6	3-4	5	3-4	2-3	1
		YELLOW 131N PY-34	6-7 6-7	4-5	5	4	3	1
		YELLOW 132N PY-34	6-7 6-7	4-5	5	4	3	1
		YELLOW 133N PY-83	7 6-7	5	4-5	5	5	5
		YELLOW 134N PY-81	7 6-7	5	4-5	5	5	5
		YELLOW 3A863N PY-138	7 6-7	5	4-5	5	5	5
		YELLOW 3A760N PY-128	8 7-8	5	5	5	5	5
		YELLOW 3P053 PY-191	7 7	5	5	5	5	5
		YELLOW 3A781N PY-139	7 7	5	4-5	5	5	5
		YELLOW 3B136N PY-110	8 8	5	5	5	5	5
		ORANGE 333N PR-104	6-7 6-7	4-5	5	4	3	1

大恭化學 NPB Color 產品目錄

Full Shade	Tint Shade	Color Name NPB	Light Fastness	Heat Resistance	Migration	Chemical Resistance		
			Full Tint			5% HCl	10% NaOH	10% Na ₂ S • 9H ₂ O
		ORANGE 334N PR-104	6-7 6-7	4-5	5	4	3	1
		ORANGE 335N PR-104	6-7 6-7	4-5	5	4	3	1
		RED 3A008N PO-38	7 7	4	4	5	4	5
		RED 3B030N PR-166	7-8 7-8	5	5	5	5	5
		RED 339N PR-53:1	3 3	3-4	4	4-5	3-4	5
		RED 430N PR-53:1	3 3	3-4	4	4-5	3-4	5
		RED 435N PR-48:1	5-6 3-4	4	4-5	5	3-4	5
		RED 433N PR-48:3	6 4	3-4	4	5	3-4	5
		RED 436WN PR-48:2	5-6 4	3-4	4-5	5	5	5
		RED 437N PR-53:1	5-6 4	3-4	4-5	5	5	5
		RED 533N PR-57:1	4 4	3-4	4	4-5	5	5

大恭化學 NPB Color 產品目錄

Full Shade	Tint Shade	Color Name NPB	Light Fastness	Heat Resistance	Migration	Chemical Resistance		
			Full Tint			5% HCl	10% NaOH	10% Na ₂ S • 9H ₂ O
		RED 3A002N PR-221	7-8 7-8	5	5	5	5	5
		RED 3B244N PR-254	7-8 7-8	5	5	5	5	5
		RED 439N PR-185	7 6-7	5	5	5	5	5
		RED 432EN PV-19	8 7-8	5	5	5	5	5
		RED 3A083N PR-122	7-8 7-8	5	5	5	5	5
		BRODEAUX 535N PV-32	7-8 7	5	2	5	5	5
		BROWN 537RN PR-101	8 8	4	5	5	5	5
		BROWN 538N PR-101	8 8	4	5	5	5	5
		VIOLET 3A164N PV-23	7-8 7	4-5	2	5	5	5
		VIOLET 3A100N PV-37	7-8 7	4-5	4-5	5	5	5
		BLUE 635N PB-29	7-8 7-8	5	5	2	5	5

大恭化學 NPB Color 產品目錄

Full Shade	Tint Shade	Color Name NPB	Light Fastness	Heat Resistance	Migration	Chemical Resistance		
			Full Tint			5% HCl	10% NaOH	10% Na ₂ S • 9H ₂ O
		BLUE 639N PB-15:1	7-8 7-8	4-5	4-5	5	5	5
		BLUE 730N PB-15:1	7-8 7-8	4-5	4-5	5	5	5
		BLUE 734N PB-15:3	8 8	5	5	5	5	5
		BLUE 736N PB-15:3	8 8	5	5	5	5	5
		GREEN 832N PG-7	8 8	5	5	5	5	5
		WHITE 838N PW-6	6 6	5	5	5	5	5
		WHITE 839N PW-6	6 6	5	5	5	5	5
		BLACK 3A025N PBk-7	8 8	5	5	5	5	5
		BLACK 3003N PBk-7	8 8	5	5	5	5	5
		BLACK 935N PBk-7	8 8	5	5	5	5	5
		BLACK 937N PBk-7	8 8	5	5	5	5	5

大恭化學 NPB Color 產品目錄

Full Shade	Tint Shade	Color Name NPB	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			5% HCl	10% NaOH	10% Na ₂ S • 9H ₂ O
		BLACK 8113N PBk-7	8	8	5	5	5	5	5
		YELLOW 3A404N 螢光黃	3	3	5	5	5	5	5
		YELLOW 3P297P 螢光黃	3	3	5	5	5	5	5
		ORANGE 8181N 螢光橙	3	3	5	5	5	5	5
		PINK 3P493 螢光桃紅	3	3	5	5	5	5	5
		PINK 3P351 螢光桃紅	3	3	3	4	4	4	4
		PINK 3A438N 螢光桃紅	3	3	5	5	5	5	5
		GREEN 3A437N 螢光綠	3	3	5	5	5	5	5