

PAINE VPT COLOR










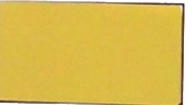



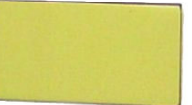




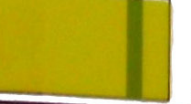

PAINE VPT COLOR





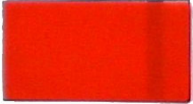












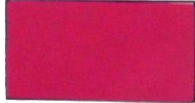


*Chips Color
for PU*










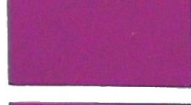



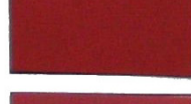

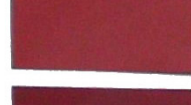
























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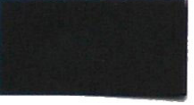



大恭

Full	Tint	Paine VPT Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na ₂ S ₂ O ₈ ·9H ₂ O
		Yellow 9A306 PY-34	5	5	5	5	4	3	1
		Yellow 9A191 PY-34	5	5	5	5	4	3	1
		Yellow 9A192 PY-34	5	5	5	5	4	3	1
		Yellow 9A406 PY-184	7	6	5	5	5	5	5
		Yellow 9A405 PY-184	7	6	5	5	5	5	5
		Yellow 9A404 PY-184	7	6	5	5	5	5	5
		Yellow 9A194 PY-81	5	5	4-5	4	5	5	5
		Yellow 9A199 PY-17	5-6	5	4	4	5	5	5
		Yellow 9A193 PY-83	6-7	6	5	4	5	5	5
		Yellow 9A265 PY-138	7	6	5	5	5	5	5

Full	Tint	Paine VPT Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na ₂ S ₂ O ₈ H ₂ O
		Yellow 9A266 PY-139	7	6	5	5	5	5	5
		Yellow 9A072 PY-110	7	6	5	5	5	5	5
		Orange 9A395 PO-21	6	6	4-5	5	4	3	1
		Red 9A590 PO-38	7	5	4	4	5	5	5
		Red 9A495 PR-48:1	5	4-5	3-4	4	5	4	5
		Red 9A497 PR-48:2	5	5	3-4	3	5	3	5
		Red 9A498 PR-208	6	5	4-5	4-5	5	5	5
		Red 9A499 PR-185	6	5	4	4	5	5	5
		Magenta 9A027 PR-221	6-7	5-6	5	5	5	5	5
		Red 9A587 Pr-221	6	5	5	5	5	5	5

Full	Tint	Paine VPT Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na ₂ S·9H ₂ O
		Red 9A341 PR-170	6	4-5	5	4	5	5	5
		Red 9A378 PR-48:2	4	4	5	4	5	5	5
		Red 9A492 PV-19	7	6	5	5	5	5	5
		Red 9A031 PR-122	7	6	5	5	5	5	5
		Red 9A394 PR-122	7	6	5	5	5	5	5
		Bordeaux 9A256 PV-19	6	6	5	5	5	5	5
		Bordeaux 9A153 PV-32	6	6	5	5	5	5	5
		Brown 9A599 PBr-6	7	6	5	5	5	5	5
		Brown 9A690 PBr-25	7	6	5	5	5	5	5
		Brown 5RT PBr-25	7	6	5	5	5	5	5

Full	Tint	Paine VPT Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
			Full	Tint			3N HCL	10% NaOH	10% Na ₂ S ₂ O ₄
		Green 9A892 PG-7	8	7	5	5	5	5	5
		Violet 9A692 Pv-23	7	5	5	4	5	5	5
		Blue 9A508 PB-15:3	7	6	5	5	5	5	5
		Blue 9A795 PB-15:3	7	6	5	5	5	5	5
		Blue 9A793 PB-15:3	7	6	5	5	5	5	5
		Blue 9A445 PB-29	8	7	5	5	3	5	5
		White 9A342 PW-6	4	5	5	5	5	5	5
		White 9A897 PW-6	4	5	5	5	5	5	5
		White RT (9A899) PW-6	4-5	5-6	5	5	5	5	5
		White 9A356 PW-6	5-6	6	5	5	5	5	5

		Paine VPT Color	Light Fastness		Heat Resistance	Migration	Chemical Resistance		
Full	Tint		Full	Tint			3N HCL	10% NaOH	10% Na ₂ S ₂ O ₈
		Black 9A392 PBk-7	8	6	5	5	5	5	5
		Black 9A449 PBk-7	8	6	5	5	5	5	5
		Black 9A997 PBk-7	8	6	5	5	5	5	5
		Black 9A999 PBk-7	8	6	5	5	5	5	5
		Black 9A090 PBk-7	8	6	5	5	5	5	5
									

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.

註：以上所列物性數據為典型試驗數據，不做產品規格及保證。尤其著色量低於0.1%時客戶必須自行測試所需物性。

Paine VPT Color

1. Introduction

Paine VPT Colors are excellent processed pigment in flake developed for vinyl print inks through our research and experience in the field of fine chemical industry. They are also used for coloring polyurethane leather (synthetic leather) and PVC paint.

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

Paine VPT Colors consist of pigments selected carefully and a copolymer of polyvinyl chloride with vinyl acetate.

2. Characteristics

- (A). Long storage life
 - (b). Easy in color matching
 - (c). Excellent in solubility and improvable in operation efficiency thereby
 - (d). Stable in quality
 - (e). Clear and brilliant shade
 - (f). Stable in viscosity
 - (g). High transparence
- Having above-mentioned excellent properties, Paine VPT Colors may contribute to the rationalization of your manufacturing process

3. Data of color sheet

(a). Compound

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

(b). Full Shade

	Organic	Inorganic	Black	White
Compound	100	100	100	100
Paine VPT Color	3.0	5.0	2.0	10.0

(c). Tint Shade

	Organic	Inorganic	Black	White
Compound	100	100	100	100
Paine VPT Color	1.0	2.0	1.0	10
VPT WH 9A899	4.0	4.0	4.0	---
VPT BK 9A090	---	---	---	0.2

(d). Sheetting Data

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

4. 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 scale 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 m² 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

INTRODUCTION TO

PAINE VPT 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 Paine VPT Color.

1. Yellow —

(A) Inorganic Colors:

- (1) Paine Yellow 9A306
- (2) Paine Yellow 9A191
- (3) Paine Yellow 9A192

- a.) The above 3 items are made of Chrome yellows. The major components are $\text{PbCrO}_4 \cdot 3.2\text{PbCrO}_4 \cdot 1\text{PbSO}_4 \cdot 2.5\text{PbSO}_4 \cdot 1\text{PbSO}_4$ which contains Lead (Pb). The color will turn dark when it contacts with Sulfur (S). Therefore, any applications which may have contact with Sulfur should be avoided.
- b.) The above items have good hiding power, but their tinting strength and brightness are worse than Organic Yellow. As the prices are low, they have been widely adapted for products without strict restriction of toxic materials.
- c.) Paine Yellow 9A192 is with the most reddish shade. Paine Yellow 9A306 is greenish. Paine Yellow 9A191 is the medium yellow between yellow 9A192 and 9A306.

(B) Organic Colors:

- (1) Paine Yellow 9A193
- (2) Paine Yellow 9A194
- (3) Paine yellow 9A199
- (4) Paine Yellow 9A265
- (5) Paine Yellow 9A072
- (6) Paine Yellow 9A266

- a.) Comparing with inorganic colors, organic colors are more transparent. Besides, they are brighter in color shade and higher in color strength. The typical greenish yellows are Paine Yellow 9A194 and 9A199. Paine Yellow 9A193 is reddish. Although their prices are comparative expensive, the organic colors are applicable to the fields with strict restriction of toxic materials and requirement of brightness and transparency.
- b.) As the solvent resistance of Paine Yellow 9A199 is just fair, to avoid the possible contamination of the release paper due to high dosage, we strongly suggest a laboratory test before the production. (The extent of contamination varies in the different kind of release paper.)
- c.) Paine Yellow 9A265, 9A266 and 9A072 are excellent in heat resistance, light fastness, migration and solvent resistances. If there are limitations of the content of the heavy metals and DCB in the products, the above items are the best choices to substitute the Inorganic colors.

2. Orange —

(A) Inorganic Color : Paine Orange 9A395

It is made of Molybdate Orange made and consists of $25\text{PbCrO}_4 \cdot 4\text{PbMoO}_4 \cdot 1\text{PbSO}_4$ which is similar to inorganic yellow in properties. The hiding power is satisfactory, but Sulfur-resistance is poor.

(B) Organic Color: Paine Red 9A590

It is made of Naphthol As pigment. Although it is expensive, it has good light fastness and good transparency. 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 while cheap ones are always of worse properties. 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.

(B) General-grade Reds are prohibited for tiny dosage (below 1-0.5%) due to poor light fastness. The shade tends to fade away either in single-color application or color matching. Although the high-class red colors are more expensive, they are strongly recommended to ensure the product quality with tiny dosage.

a.) General-grade Red Color:

(1) Paine red 9A495 is made of Barium salt Watchung Red.

(2) Paine red 9A497 and 9A378 are made of Calcium salt Watchung Red.

The above are general-grade color and they are cheap. Due to their light fastness is poor, they are applicable to products with total color dosage above 2.5% (single red color should be over 1.5%) or products used indoor. Applications with tiny dosage should be avoided. Before production, the laboratory test with the requiring conditions in mass production is

recommended. General-grade red color will contaminate the release paper more or less and the extent of contamination varies in the different release papers.

b.) Medium class Red Color :

(1) Paine Red 9A498

(2) Paine Red 9A499

(3) Paine Red 9A256

(4) Paine Red 9A587

(5) Paine Magenta 9A027

(6) Paine Bordeaux 9A153

Price higher but properties are good. The hue of Paine Red 9A498 is quite special. The full shade is bluish, while the tint shade is yellowish so it is widely used. The dosage recommended at least is 0.5%. But the test is strongly required before the mass production. For trifling dosage, we should select the high-grade reds.

c.) High-grade Red Color:

(1) Paine Red 9A492

(2) Paine Red 9A394

(3) Paine Red 9A031

Above Colors are expensive and their stability, light fastness and heat resistance are excellent.

4. Brown —

(A) Inorganic Color ;

Paine Brown 9A599 is made of Fe_2O_3 . The heat and weather resistances are excellent. Besides, the price is low, only the weakness is its poor chemical-stability in the solvents. Although it is not stable after dissolving, it is still used widely.

(B) Organic Color :

Paine Brown 9A690 and 5RT are made of the high-grade synthetic pigments which are applicable to transparent products. Although they are expensive, their heat resistance, light fastness and stability are excellent.

5. Violet —

Paine Violet 9A692 is made of a high-grade synthetic pigment with excellent heat resistance and light fastness. But, the solvent resistance is just fair. With high dosage, it will cause slight contamination to the release paper. Its bright shade can not be substituted by the mixture of Red and Blue Color.

6. Blue —

Ultramarine Blue and Phthalocyanine Blue are the 2 major Blue pigments we are using. Because the acid resistance of Ultramarine Blue is poor, it is not commonly used for PU leather.

- (1) Paine Blue 9A793 is reddish and widely used.
- (2) Paine Blue 9A795 is greenish and widely used.
- (3) Paine Blue 9A508 has a similar shade of Paine Blue 9A795. It was developed to solve the problem of color deviation after dissolving in the PU compound. Among similar products, its stability is the best after dissolving.
- (4) Paine Blue 9A445 : Ultramarine Blue is applicable to match snow white color.

7. Green —

Paine Green 9A892 is made of Phthalocyanine Green . Its properties are similar to phthalocyanine Blue which are excellent in Heat resistance and light fastness. Green 9A892 is the yellowish one with good brightness and is good for color matching.

8. White —

TiO₂ is the most popular white pigment, while Zinc white and Lead white are seldom used due to poor hiding power. TiO₂ 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 application to PU leather coloring. As to adapt R type TiO₂ for PU leather, especially for matching snow-white color, we had better find the whitest one and add some violet or blue color to get it.

- (1) Paine white 9A897 - commonly used with good stability.
- (2) Paine white 9A899 - high color strength and good whiteness, good for color matching for various snow-white products.
- (3) Paine white 9A342 – Snow-white.

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 the pigment and resin.

- (1) Paine Black 9A997 、 9A392 - fair blackness and high color strength, suitable for color matching .
- (2) Paine Black 9A999 - good blackness, suitable for various black products. For color matching, it is relatively stable.
- (3) Paine Black 9A090 and 9A449 - good blackness, suitable for various black products.

PAINE VPT 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，茲就本公司 Paine VPT Color 之基本色，逐一簡單介紹如下：

1. 黃色系列(Yellow)：

(A) 無機色料：

- (1) Paine Yellow 9A306
- (2) Paine Yellow 9A191
- (3) Paine Yellow 9A192

- a. 以上三種色料均為鉻黃製品(Chrome Yellow)，其成份大致為 $\text{PbCrO}_4 \cdot 2\text{PbCrO}_4 \cdot 1\text{PbSO}_4 \cdot 2.5\text{PbSO}_4$ 均為含鉛顏料，遇硫(S)會產生 PbS 而變黑，故在使用此種色料應避免與含硫物一起使用，在下游上膠也應注意膠水中之成份。
- b. 遮蓋力好，其著色力，鮮艷度較有機黃色色料差。但因其價格便宜，所以在不要求低毒產品中，被廣泛使用。
- c. 其中以 Paine Yellow 9A192 最紅，Paine Yellow 9A306 為檸檬黃、Paine Yellow 9A191 兩者為中黃。

(B) 有機色料：

- (1) Paine Yellow 9A193
- (2) Paine Yellow 9A194
- (3) Paine Yellow 9A199
- (4) Paine Yellow 9A265
- (5) Paine Yellow 9A072
- (6) Paine Yellow 9A266

- a. 一般有機色料均較透明，且鮮艷佳，著色力強，代表性青口為 Paine Yellow 9A194 與 Paine Yellow 9A199，紅口為 Paine Yellow 9A193 在要求低毒、鮮艷、透明時使用之，唯其價格較高。
- b. Paine Yellow 9A199 耐溶劑性略差，在高著色量時為避免離型紙污染，應先試妥當後再使用。(離型紙不同，污染情形亦異)。
- c. 黃色色料，在微量使用時，耐光性約在 5-6 級(依 CNS L-1008 之規則)。
- d. Paine YL 9A265 可取代 Paine YL 194
Paine YL 9A266 可取代 Paine YL 193
兩者使用於無毒，不含 DCB 之製品，為較高級黃色色料。尚有較佳之有機黃色 Paine Yellow 9A072(帶紅味)。

2. 橙色系列(Orange)

(A) 無機色料：

Paine Orange 9A395 鉬紅(Molybdate Orange)其成份為 $25\text{PbCrO}_4 \cdot \text{PbMoO}_4 \cdot 1\text{PbSO}_4$ 因其含鉛，所以與無機黃色相同，但遮蓋力好，耐硫性差，需選擇使用。

(B) 有機色料：

Paine Red 9A590

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最為複雜。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，其價格很貴，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，配合製品之需求當可節省成本又可製造優良製品。

- (B) 一般級紅色，切忌微量(1~0.5%以下)使用，微量使用時，不管是調色或單獨色使用，其耐光性均差，易褪色。為改善此情況，應選用高級紅色顏料，確保品質。因為微量使用，即使價格高對成本之影響也是微乎其微。

a. 一般級紅色顏料：

(1) Paine Red 9A495: Watching Red Ba" 金屬鹽沈澱顏料。

(2) Paine Red 9A497、9A378: Watching Red Ca" 金屬鹽沈澱顏料。

以上兩色為一般級色料，均具有價格便宜之優點，但其耐光耐候性較差，所以著色總量大約在 2.5% 以上且單一紅色在 1.5% 以上，或者製成品係室內使用時均可使用，以上產品均忌微量使用，建議仍需依實際要求條件試驗後使用，一般級紅色顏料稍會污染離型紙，其污染程度又因離型紙不同而異。

b. 中級紅色顏料：

- (1) Paine Red 9A498
- (2) Paine Red 9A499
- (3) Paine Bordeaux 9A256
- (4) Paine Red 9A587
- (5) Paine Magenta 9A027
- (6) Paine Bordeaux 9A153

價格較貴，但物性佳。其中 Paine Red 9A498 之色相較特殊，濃色色相偏藍味，淡色色相偏黃味，因此被廣使用。此系列之用量建議在 0.5% 以上時用。但仍需經實際所需條件去試驗後使用。使用量在微量時，仍不建議使用，應再考慮更高級之紅色色料。

c. 高級紅色顏料：

(3) Paine Red 9A492

(4) Paine Red 9A394

(5) Paine Red 9A031

具備有三種不同色彩之高級紅色之選用，價格均高，而此級之色料在 Coloring 後(即打成面料)其色穩定性最佳。且耐光耐熱性均優。

4、棕色系列(Brown)：

(A) 無機色料：

Paine Brown 9A599 屬鍛燒氧化鐵(Fe_2O_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：

Paine Brown 9A690、5RT 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，缺點為價格高。

5、紫色系列(Violet)：

Paine Violet 9A692 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。

6、藍色系列(Blue)：

主要藍色色相有群青及苯二甲藍素顏料(Phthalocyanine Blue)，本公司產品均用苯二甲藍素顏料中之 β 型製造產品。

(1) Paine Blue 9A793：此色色相偏紅味，被廣泛使用。

(2) Paine Blue 9A795：一般色，色相帶綠味，亦被廣泛使用。

(3) Paine Blue 9A508：此色色相與 Paine Blue 9A795 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。此色之優點為品質較 Paine blue 9A795 優，Coloring 後經時穩定性最佳，市售藍色均不及此色效果。

(4) Paine blue 9A445：無機顏料群青系為鍛燒顏料，可調配雪白色用。缺點：群青耐酸差。

7、綠色系列(Green)：

Paine Green 9A892 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 Paine Green 9A892 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(TiO_2)使用最多，其他鋅白、鉛白等因隱蔽力差使用較少，而二氧化鈦又分為 A 型(A Type)及 R 型(R Type)，A 型較白但隱蔽力、耐光、耐熱較差在 PU Leather 不被採用。R 型之二氧化鈦製造，因 R 型二氧化鈦之白度較差，所以需要雪白產品時，必須選用最白的色料調紫色及藍色而成。

(A) Paine White 9A897：一般常用 R-Type 白色，Coloring 後穩定性佳。

(B) Paine white 9A899：除濃度高外，白度亦佳，適合調配各種雪白產品。

(C) Paine white 9A342，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，若要求艱黑時應從色料的選擇著手，或展色之樹脂選擇著手。

(C) Paine Black 9A997、9A392：一般黑，色濃度高可使用於配色。

(B) Paine Black 9A999：黑度佳，適於製造各種黑色產品，如使用在調色時，Coloring 後經時性較佳。

(C) Paine Black 9A090、9A449：黑度佳，適於製造各種黑色產品。