

Konservasyon Birimi
Şifahane’de Kullanılan Pastel Boyalar

Pastel Boya

Pastel boyalar genellikle tebeşire benzer çubuk şeklindedir. Pastel çubuklar öğütölmüş saf pigment ile Arap zankı, kitre (geven) zankı veya metil selöloz gibi inert bir bağlayıcıdan oluşur. Diğer boyalara göre pastellerin pigment derişimi daha yüksektir, böylece pasteller ile zengin ve parlak renkler elde edilebilir. Pastel boyalarda kullanılan toz pigmentler yağlı boyalardakilerle benzerdir.

Pastel boyalar sert veya yumuşak olabilir. Yumuşak pastellerde daha fazla pigment daha az bağlayıcı bulunur, böylece bulaşmaları kolay olur ve daha parlak renkler elde edilir. Sert pastellerde yumuşak pastellere nazaran daha az pigment ve daha fazla bağlayıcı bulunur. Sert pasteller görece keskin olur, bu sayede ince detaylar gerektiren işler için idealdir¹.

Pastel boya yapımı akrilik veya sulu boya yapımına göre biraz daha karmaşık olsa da kısmen basit bir prostedir. Şekil 1’de pastel boya yapım aşamaları gösterilmiştir.



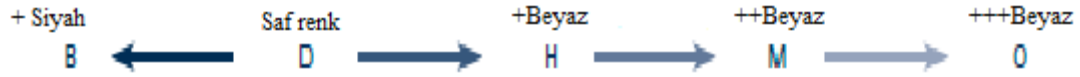
Şekil 1- Pastel boya yapımı¹

A) Toz kitre zankı cam bir kavanoza koyulur, su eklenir ve çözünmesi için karıştırılır. Genellikle 1 birim kitre zankı için 30 birim su oranı kullanılır. Kavanoz kapatılır ve en az 48 saat buzdolabında bekletilir. Karışım jelatinimsi bir çözelti haline gelecektir. B) Cam bir paleta toz pigment konur. Pigment yığınının ortasında delik açılır. Pigmentin ortasına çok az kitre zankı çözeltisinden dökölür. Palet bıçağı kullanılarak pigment ve kitre zankı çözeltisi karıştırılır. C) Gerekli durumlarda daha fazla zank çözeltisi eklenir. Karışım hamurumsu bir kıvam alana kadar iyice karıştırılır. D) mavinin daha açık tonlarını elde etmek için kalan mavi pastele beyaz pigment eklenir. Az miktar kitre zankı ilavesi sonrası karıştırma prosesi tekrarlanır. E) Hamurumsu pastel çubuk gibi şekillendirilir. Pastel kağıt havlu gibi emici bir kağıt üzerine yerleştirilir. Pastel kurumaya bırakılır (24-48 saat). Kullanım amacına bağlı olarak istenen şekle getirilir. F) Kuru pasteller ile aşındırıcı kağıt üzerinde yapılan çizimler¹.

Schmincke Pastel Boyalar

Schmincke pastel boyalar ince öğütülmüş saf pigmentleri mümkün olan en yüksek derişimdeki halleriyle içerir. Bağlayıcı ajan ise tersine stabil bir bileşik oluşturmak için minimumda tutulmuştur. Homojen kalite ve pürüzsüzlük garanti altına alınmıştır².

Renkler Şekil 2’de gösterilen saf renk (D), siyah harman (B) ve 3 derece beyaz harman (H, M, O) gibidir.



Şekil 2- Schmincke pastel boya renk skalası²

Boyaların üzerinde bulunan ışık haslığını ifade eden derecelendirme sistemi Şekil 3’de gösterilmiştir.



Şekil 3- Schmincke ışık haslığı derecelendirme sistemi²

Şifahane’de Kullanılan Schmincke Pastel Boyalar³

Boyalarda kullanılan pigment kodlarına ilişkin açıklayıcı broşür Ek 1’de, verilmiştir⁴.

038 Walnut Brown 17 038 069 D



★★★★★
PBr 33

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 33

007 Titanium Yellow 17 007 079 O



★★★★★
PY 53, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 53, PW 6

035 Burnt Umber 17 035 069 D



★★★★★
PBr 6, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 6, PBk 11

095 Cold Grey 17 095 069 D



★★★★★
PB 29, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PB 29, PBk 11

040 Vermilion 17 040 079 O



★★★★★ ●
PR 242, PR 188, PR 3, PW 6

Işık haslığı: ★★★★★ (iyi dayanıklılık)

PBr 6, PBk 11

063 Ultramarine Deep 17 063 069 D



★★★★★ ●
PB 29, PV 23, PB 15:1

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PB 29, PV 23, PB 15:1

064 Cobalt Blue Tone 17 064 069 D



★★★★★ ●
PB 29, PB 15:1

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PB 29, PB 15:1

017 Orange Ochre 17 017 069 D



★★★★★ ●
PY 42, PY 119

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PB 42, PY 119

013 Ochre Light 17 013 069 D



★★★★★ ●
PBr 24, PY 42, PG 17

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 24, PY 42, PG 17

036 Vandyke Brown 17 036 069 D



★★★★★ ●
PBr 6, PR 101, PBr 33, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 6, PR 101, PBr 33, PBk 11

018 Burnt Sienna 17 018 069 D



★★★★★ ●
PY 119, PR 101, PBr 6, PBr 24

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 119, PR 101, PBr 6, PBr 24

033 Burnt Green Earth 17 033 069 D



★★★★★ ●
PR 101, PY 119

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PR 101, PY 119

019 Burnt Yellow Ochre 17 019 069 D



★★★★★ ●
PR 101, PY 42

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PR 101, PY 42

066 Prussian Blue 17 066 069 D



★★★★ ●
PB 29, PB 27, PB 66

Işık haslığı: ★★★★★ (iyi dayanıklılık)

PB 29, PB 27, PB 66

094 Greenish Grey 17 094 068 B



★★★★★ ●
PG 17, PB 29, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PG 17, PB 29, PBk 11

030 Greenish Umber 17 030 079 O



★★★★★ ●
PY 42, PBk 11, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PBk 11, PW 6

030 Greenish Umber 17 030 069 D



★★★★★ ●
PY 42, PY 119, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PY 119, PBk 11

037 Sepia Brown 17 037 069 D



PBk 11, PBr 6, PBr 33

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBk 11, PBr 6, PBr 33

017 Brown Ochre 17 017 079 O



PY 42, PBr 6, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PBr 6, PW 6

032 Brown Ochre 17 032 369 D



PY 42, PY 119, PBr 24, PBk 11

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PY 119, PBr 24, PBk 11

022 English Red 17 022 069 D



PBr 33, PR 101, PY 42

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PBr 33, PR 101, PY 42

008 Vanadium Yellow Light 17 008 079 O



PY 184, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 184, PW 6

014 Gold Ochre 17 014 073 H



★★★★★ ●
PY 42, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PW 6

028 Olive Ochre Light 17 028 073 H



★★★★★ ●
PY 42, PG 17, PW 6

Işık haslığı: ★★★★★ (aşırı dayanıklılık)

PY 42, PG 17, PW 6

Schmincke Pastell İçin Güvenlik Bilgileri

Uygun kullanım durumunda sağlığa zararı yoktur. Tozun solunmasından kaçınılmalıdır. Kısmen biyobozundur⁵.

Schmincke Pastell için detaylı güvenlik bilgileri Ek-2’de verilmiştir.

Schmincke Pastell İçin Raf Ömrü

Kuru bir ortamda muhafaza edilirse pastel boyaların raf ömrü sınırsızdır, çünkü temelinde saf pigmentlerden elde edilmiştir.

Tüm boyaların içinde en uzun raf ömrüne sahip olan pastel boyalardır.

Kaynakça

1- <http://www.webexhibits.org/pigments/intro/pastel.html>

2- http://www.schmincke.de/fileadmin/downloads/pdf/Broschueren_2015/Pastell_Farben.pdf

3-

http://www.schmincke.de/fileadmin/downloads/pdf/Broschueren_2015/Pastell_D_GB_2015_141201.pdf

4-

http://www.schmincke.de/fileadmin/downloads/pdf/Broschueren_2015/Pigmentbroschuere_2015_150128.pdf

5- <http://www.schmincke.de/products/health-safety/safty-data-sheet/aquarell.html?L=1> (güvenlik bilgileri)

Schmincke

Pigmente

Sorte / Series 18

Reine Künstler-Pigmente

Pure artists' pigments



Premium Künstler - Pigmente

18 501 ③ ★★★★★

Kobalttürkis

cobalt turquoise

turchese di cobalto

turquesa de cobalto

100%
Pigment

Schmincke

Viele Künstler reiben auch heute ihr Farbmaterial ganz wie die alten Meister aus den Basisrohstoffen **Pigment und Bindemittel** selber an. Für sie bietet Schmincke neben dem umfangreichen Spektrum feiner und feinsten Künstlerfarben ein hervorragendes Sortiment an erlesenen Premium-Künstler-Pigmenten sowie zahlreiche hochwertige Bindemittel an.

Schmincke **Reine Künstler-Pigmente** tragen das Siegel „100 % Pigment“. Sie enthalten 100 % unverschnittenes Künstler-Pigment und sind, verarbeitet mit unseren hochwertigen Bindemitteln, ein Garant für selbstgemischte Künstlerfarben von höchstmöglicher Brillanz, Farbintensität und Ergiebigkeit. Das Sortiment beinhaltet 48 klassische Farbtöne in einem 100 ml-Glas, zudem 24 spezielle **EXTRA**-Farbtöne wie z.B. echte Kadmium- und Kobaltpigmente in 50 ml-Glas.

Schmincke **Reine Künstler-Pigmente**, Sorte 18

- 48 klassische Farbtöne in 100 ml
- 24 spezielle **EXTRA**-Farbtöne in 50 ml
- maximale Lichtecktheit
- fein gesiebte Pulver



Auf den folgenden Seiten dieser Broschüre finden Sie neben den Farbwischern im Vollton und in der Ausmischung mit Weiß zu jedem Pigment noch diese technischen Informationen:

Colour Index

Neben einem individuellen Handelsnamen, der meist direkten Bezug auf den Farbton, die Chemie oder die Herkunft des jeweiligen Pigmentes nimmt, gibt es für fast alle Pigmente noch eine standardisierte Colour-Index-Nummer (C.I.-Nummer). Diese Buchstaben-Zahlenkombination ermöglicht mit ein wenig Hintergrundwissen eine einfache Zuordnung eines Farbmittels zu einer Pigment- und Farbtongruppe. Aber aufgepasst: Ein gleicher Colour-Index bei zwei Pigmenten bedeutet nicht zwangsweise einen exakt gleichen Farbton!

Gruppe der Colour Index Namen:

- PW = Pigment Weiß
- PY = Pigment Gelb
- PO = Pigment Orange
- PR = Pigment Rot
- PV = Pigment Violett
- PB = Pigment Blau
- PG = Pigment Grün
- PBr = Pigment Braun
- PBk = Pigment Schwarz

Dispergierbarkeit eines Pigmentes

Beim Selbstanreiben von Künstlerfarben stellt man relativ schnell fest: Nicht alle Pigmente lassen sich gleich gut mit einem bestimmten Bindemitteltyp verarbeiten. Zudem benötigt man zur Herstellung von Malfarben gleicher Konsistenz bei unterschiedlichen Pigment-Typen unterschiedliche Mengen an Bindemittel.

Ein wesentlicher Grund hierfür ist die Tatsache, dass die Pigmente zwei verschiedenartigen chemischen Klassen zugehören: Man unterscheidet in

- M = anorganische Pigmente (ursprünglich „mineralischer Herkunft“)
- O = organische Pigmente (ursprünglich „tierischen oder pflanzlichen Ursprungs“)

In der Regel lässt sich sagen:

- Anorganische Pigmente haben einen geringeren Bindemittelbedarf als organische.
- Anorganische Pigmente lassen sich leichter in wässrige Bindemittel einarbeiten als organische.

Wichtig zu wissen: Es ist eine charakteristische Eigenschaft von Pigmenten, dass sie sich – im Gegensatz zu Farbstoffen – nicht im jeweiligen Bindemittel lösen!

Deckvermögen einer Künstlerfarbe

Das Deckvermögen einer Malfarbe beschreibt ihre Fähigkeit, einen Untergrund abzudecken. Es ist sowohl abhängig von der Zusammensetzung der Malfarbe – also von Art und Menge an Pigment und Bindemittel – als auch von der Stärke der aufgetragenen Farbschicht. Generell unterteilt man in

- lasierend
- halblasierend
- halbdeckend
- deckend

Die Angaben zum Deckvermögen der einzelnen Produkte in dieser Broschüre wurden durch Anreiben in einem Öl-Bindemittel ermittelt. In einem traditionellen Gouache-Bindemittel ist der Gesamteindruck der angeriebenen Pigmente nach dem Trocknen wesentlich deckender.

Lichtecktheit

Unter der Lichtecktheit versteht man die Beständigkeit einer Malfarbe im Tageslicht. Bewertet wird sie üblicherweise im Vergleich gegen einen 8-stufigen Standard, die sogenannte Wollskala, wobei 1 die geringste und 8 die höchste Lichtecktheit bedeutet. Wir bei Schmincke benutzen zur Darstellung der Lichtecktheit parallel zur Wollskala zudem ein 5-stufiges Sterne-System.

Wollskala 5-Sterne-System

Wollskala	5-Sterne-System	Eigenschaft
8	★★★★★	höchste Lichtecktheit
7	★★★★	sehr gute Lichtecktheit
6 + 5	★★★	gute Lichtecktheit
4	★★	befriedigende Lichtecktheit
3	★	ausreichende Lichtecktheit
2 + 1	–	lichtunbeständig

Kalkecktheit

Als kalkecht bezeichnet man Pigmente, die von gelöschtem Kalk nicht verändert werden. Diese Pigmenteigenschaft ist eine wesentliche Voraussetzung für die Verarbeitbarkeit eines Pigmentes in der klassischen Fresco-Malerei.

- K kalkecht
- Kl nur kalkecht in Innenbereichen

100% pure artists' pigments: characteristics

Even nowadays many artists grind their own colour, like the old masters, out of the basic material, **pigment and binder**. Apart from a large assortment of fine and finest artists' colours, Schmincke offers an outstanding range of highly premium pigments and scores of high-class binders.

Schmincke **pure artists' pigments** are labeled "**100% pigment**". They contain 100% pure pigment which has not been extended or blended. In combination with our high-class binders, they guarantee highest possible brilliance, maximum colour intensity and productivity. The assortment contains 48 classical colours in 100 ml jars and in addition 24 specific **EXTRA** colours like genuine cadmium and cobalt pigments in 50 ml jars.

Schmincke **pure artists' pigments**, Series 18:

- 48 classical colours in 100 ml
- 24 specific **EXTRA** colours in 50 ml
- maximum lightfastness
- finely sifted powder



On the following pages of this brochure you will find side by side to the colour samples – in full shade and in mixture with white – also these technical information:

Colour Index

In addition to the individual commercial name of the particular pigment, which is based on its colour shade, its chemical composition or its origin, you are able to find for nearly every pigment a standardized Colour Index Number (C.I. number). By using this combination of letters and numbers, it is much easier to assign a colourant to a pigment and colour group. But be aware, that a similar Colour Index of two pigments does not guarantee exactly the same hue!

Group of Colour Index names:

- PW = Pigment White
- PY = Pigment Yellow
- PO = Pigment Orange
- PR = Pigment Red
- PV = Pigment Violet
- PB = Pigment Blue
- PG = Pigment Green
- PBr = Pigment Brown
- PBk = Pigment Black

Dispersibility of a pigment

While producing your own artist colour you quickly recognize: The reaction of different pigments in varying amounts of binders are totally different! For the production of painting colours of similar consistency, but of different types of pigments, you also need to use a varying amount of binder.

One of the major reasons is the fact that the pigments are sorted into two chemical groups. Generally you differ between:

- M = inorganic pigments
(in former times "mineral origin")
- O = organic pigments
(in former times "bestial or vegetable origin")

Basically you can say:

- Inorganic pigments have got a lower demand on binder than organic pigments.
- Inorganic pigments are easier to mix with aqueous binders than organic pigments.

Important to know: It is a characteristic property of pigments that they – in contrast to dyes – are not dissolving in the respective binder!

Opacity of an artists' colour

The opacity of a painting colour describes their ability to cover what is beneath them. This depends on the one hand on the composition of the painting colour – which means type and amount of pigment and binder – on the other hand on the thickness of the applied paint layer. You generally divide into:

- transparent
- semi-transparent
- semi-opaque
- opaque

The values for the opacity of the products in this brochure have been measured by grinding the pigments in an oil binder. Using a traditional gouache binder would make the colours more opaque.

Lightfastness

Lightfastness indicates the resistance of a colour in daylight. It can be evaluated in comparison to the woolscale and is expressed with numbers, whereby 1 stands for a very low and 8 for the maximum lightfastness. We as Schmincke are using next to this woolscale a 5-star-system to display the lightfastness:







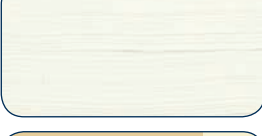





Woolscale	5-star-system	
8	★★★★★	extremely lightfast
7	★★★★	good lightfastness
6 + 5	★★★	lightfast
4	★★	limited lightfastness
3	★	less lightfast
2 + 1	–	not lightfast

Lime resistance



Pigments, which cannot be changed by hydrated lime, are called lime resistant. This pigment characteristic is an essential condition for the processing of a pigment in the traditional fresco technique.

- K lime resistant
- KI only lime resistant inside

48 Pigmente / pigments in 100 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description
	18 106 ① Blanc fixe ★★★★★ M <i>Blanc fixe</i> ☐ K	Bariumsulfat <i>Barium sulfate</i>	PW 21	Permanentweiß/synthetischer Schwerspat; sehr heller Füllstoff mit hohem Gewicht Permanent white/Artificial barite; very light extender with an enormous weight
	18 107 ① Marmorpulver (Kreide) ★★★★★ M <i>Powdered marble</i> ☐ K	Calciumcarbonat <i>Calcium carbonate</i>	PW 18	Kalkstein/Marmorwehl; heller Füllstoff; ideal in deckenden Maltechniken und zur Bereitung von traditionellen Kreidegründen Limestone/Marble flour; light extender; ideal in opaque painting techniques and for preparing traditional chalk grounds
	18 111 ① Tonerde weiß ★★★★★ M <i>Alumina white</i> ☐ K	Natrium-Aluminiumsilicat <i>Sodium aluminium silicate</i>	PW 19	Porzellanerde/Kaolin; sehr heller Füllstoff; ideal in transparenten Maltechniken China clay/Caoline; very light extender; ideal in transparent painting techniques
	18 112 ① Talkum ★★★★★ M <i>Talcum</i> ☐ K	Magnesium-Aluminiumsilicat <i>Magnesium aluminium silicate</i>	PW 26	Heller Füllstoff mit geringer Härte; ideal in wässrigen Maltechniken; begünstigt Schleifbarkeit von Grundierungen <i>Light extender with a low hardness; ideal in aqueous painting techniques; benefits the grindability of grounds</i>
	18 103 ① Titanweiß ★★★★★ M <i>Titanium white</i> ■ K	Titandioxid <i>Titanium dioxide</i>	PW 6	Standardweiß; strahlend weißes Weißpigment mit höchstem Deck- und Aufhellvermögen Basic white; bright white pigment with the highest opacity and lightening power
	18 105 ① Zinkweiß ★★★★★ M <i>Zinc white</i> ■ K	Zinkoxid <i>Zinc oxide</i>	PW 4	Chinesischweiß; helles reines Weißpigment mit mittlerem Deck- und Aufhellvermögen; ideal zum „sanften“ Aufhellen von Bunttönen Chinese white; light and clean white pigment with medium opacity and lightening power; ideal to gently lighten up any hue
	18 108 ① Lithopone ★★★★★ M <i>Lithopone</i> ■ K	Zinksulfid / Bariumsulfat <i>Zinc sulphide / Barium sulfate</i>	PW 5	Deckweiß; warmweißes Weißpigment mit einem Deck- und Aufhellvermögen zwischen Zinkweiß 18 105 und Titanweiß 18 103 ; ideal zur Herstellung weißer Malgründe Opaque white; warm white pigment with an opacity and lightening power in between Zinc white 18 105 and Titanium white 18 103 ; ideal to produce white grounds
	18 109 ② Elfenbein ★★★★★ M <i>Ivory</i> ■ K	Titandioxid / Hämatit (Cr) / Eisenoxidhydrat <i>Titanium dioxide / Hematite (Cr) / Iron oxide hydrate</i>	PW 6 / PG 17 / PY 42	Buff Titanium; schmutzig warmer Weißton; Pigmentmischung/Verkollerung Buff titanium; dirty warm white tone; mixture of pigments
	18 237 ① Zitronengelb ★★★★ O <i>Lemon yellow</i> ■ K	Monoazo <i>Monoazo</i>	PY 3	Grünstichiges kaltes Gelb; schwermetallfreie Alternative zu Kadmiumgelb zitron 18 226 <i>Green tinted cold yellow; heavy metal free alternative to Cadmium yellow lemon 18 226</i>
	18 239 ③ Brillantgelb ★★★★★ O <i>Brilliant yellow</i> ■ K	Benzimidazolone <i>Benzimidazolone</i>	PY 154	Grundfarbe Gelb Y/Permanentgelb; rotstichiges warmes Gelb; schwermetallfreie Alternative zu Kadmiumgelb hell 18 227 Basic colour yellow Y/Permanent yellow; red tinted warm yellow; heavy metal free alternative to Cadmium yellow light 18 227
	18 240 ② Indischgelb ★★★★★ O <i>Indian yellow</i> ☐ K	Nickelkomplex <i>Nickel complex</i>	PY 153	Orangegelb; lichtechte Alternative zum echten Indischgelb <i>Orange yellow; lightfast alternative to genuine Indian yellow</i>
	18 252 ③ Orange ★★★★ O <i>Orange</i> ■ K	Benzimidazolone <i>Benzimidazolone</i>	PO 62	Orange; schwermetallfreie Alternative zu Kadmiumorange 18 231 <i>Orange; heavy metal free alternative to Cadmium orange 18 231</i>

48 Pigmente / pigments in 100 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description
	18 241 ② Rotorange	Benzimidazolone	PO 36	Rotorange; schwermetallfreie Alternative zu Kadmiumrot hell 18 360
	★★★★ O Red orange	Benzimidazolone		Red orange; heavy metal free alternative to Cadmium red light 18 360
	☑ K			
	18 371 ③ Zinnoberrot	Diketo-Pyrrolo-Pyrrol	PR 255	Scharlachrot ; Orangerot; schwermetallfreie Alternative zum echten Zinnober
	★★★★ O Vermilion red	Diketo-Pyrrolo-Pyrrole		Scarlet red ; orange red; heavy metal free alternative to genuine Vermilion
	☑ K			
	18 372 ② Naphtholrot	Naphthol AS	PR 112	Permanentrot ; gelbliches Rot; schwermetallfreie Alternative zu Kadmiumrot dunkel 18 361
	★★★ O Naphthol red	Naphthol AS		Permanent red ; yellow tinted red; heavy metal free alternative to Cadmium red deep 18 361
	☑			
	18 373 ③ Karmin	Chinacridon	PV 19	Dunkles, blautichiges Rot; synthetische Alternative zum echten Karminrot
	★★★★ O Carmine	Quinacridone		Deep, blue tinted red; synthetic alternative for genuine Carmine red
	☑			
	18 367 ② Alizarin Krapplack dunkel	Anthrachinon, Al	PR 83	Dunkles, blautichiges Rot; klassisches Rotpigment mit geringer Lichtechtheit
	★★ O Alizarine crimson deep	Antraquinone, Al		Deep, blue tinted red; traditional red pigment with a low lightfastness
	☐			
	18 374 ③ Chinacridonmagenta	Chinacridon	PR 122	Grundfarbe Magenta M ; blautichiges Rot
	★★★★ O Quinacridone magenta	Quinacridone		Basic colour magenta M ; blue tinted red
	☑ K			
	18 485 ③ Blauviolett	Dioxazin	PV 23	Dioxazinviolett/Permanentviolett ; dunkles Violettpigment mit sehr hohem Färbevermögen
	★★★★ O Blue violet	Dioxazine		Dioxazine violet/Permanent violet ; deep violet pigment with a really high tinting strength
	☑ K			
	18 357 ② Ultramarinrot	Natrium-Aluminiumsilicat, schwefelhaltig	PV 15	Rotviolett; klassisches Violettpigment mit geringem Färbevermögen
	★★★★★ M Ultramarine red	Sodium aluminosulphosilicate		Red tinted violet; traditional violet pigment with a low tinting strength
	☐			
	18 497 ② Ultramarinviolett	Natrium-Aluminiumsilicat, schwefelhaltig	PV 15	Violettstichiges Blau; klassisches Violettpigment mit geringem Färbevermögen
	★★★★★ M Ultramarine violet	Sodium aluminosulphosilicate		Violet tinted blue; classical violet pigment with a low tinting strength
	☐			
	18 490 ② Ultramarinblau hell	Natrium-Aluminiumsilicat, schwefelhaltig	PB 29	Intensives Blau; synthetische, fabstärkere Alternative zum echten Ultramarin/Lapislazuli
	★★★★★ M Ultramarine blue light	Sodium aluminosulphosilicate		Intensive blue; synthetic, stronger in colour alternative to genuine Ultramarine/lapis lazuli
	☐			
	18 499 ① Ultramarinblau dunkel	Natrium-Aluminiumsilicat, schwefelhaltig	PB 29	Intensives Blau; synthetische, fabstärkere Variante zum echten Ultramarin/Lapislazuli ; dunkler und violettstichiger als Ultramarinblau hell 18 490
	★★★★★ M Ultramarine blue deep	Sodium aluminosulphosilicate		Intensive blue; synthetic, stronger in colour alternative to genuine ultramarine, deeper and more violet tinted than Ultramarine blue light 18 490
	☐			
	18 491 ③ Indigo	Indigo, synthetisch	PB 66	Tiefes Schwarzblau; klassisches Blaupigment mit mittlerer Lichtechtheit
	★★★ O Indigo	Indigo, synthetic		Deep black blue; traditional blue pigment with a medium lightfastness
	☐			

48 Pigmente / pigments in 100 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description
	18 493 ① ★★★★★ M ☐	Preußisch/Pariser Blau <i>Prussian/Paris blue</i> <i>Iron cyan complex</i>	Eisencyankomplex <i>Iron cyan complex</i>	PB 27 Milori blau; tiefes Blau; klassisches Blaupigment mit hohem Färbevermögen Milori blue ; deep blue; traditional blue pigment with a high tinting strength
	18 498 ② ★★★★★ O/M ☐	Azurlau <i>Azure blue</i> <i>Phthalocyanine (Cu)</i>	Phthalocyanin (Cu) <i>Phthalocyanine (Cu)</i>	PB 15 : 3 / PW 6 Helles Blau; Pigmentmischung/Verkollierung <i>Light blue; mixture of pigments</i>
	18 488 ② ★★★★★ O ☑	Phthaloblau <i>Phthalo blue</i> <i>Phthalocyanine (Cu)</i>	Phthalocyanin (Cu) <i>Phthalocyanine (Cu)</i>	PB 15 : 3 Grundfarbe Cyan C/Helioblau ; neutrales Blaupigment mit hohem Färbevermögen Basis colour Cyan C/Helio blue ; neutral blue pigment with a high tinting strength
	18 513 ② ★★★★★ O ☑	Phthalogrün dunkel <i>Phthalo green deep</i> <i>Phthalocyanine (Cu, Cl)</i>	Phthalocyanin (Cu, Cl) <i>Phthalocyanine (Cu, Cl)</i>	PG 7 Heliogrün dunkel ; blaustichiges Grünpigment mit hohem Färbevermögen; dunkler und brillanter als Chromoxidgrün feurig 18 507 Helio green deep ; blue tinted green pigment with a high tinting strength; deeper and more brilliant than Chromium oxide green brilliant 18 507
	18 507 ③ ★★★★★ M ☐	Chromoxidgrün feurig <i>Chromium oxide green brilliant</i> <i>Chromium oxide hydrate</i>	Chromoxidhydrat <i>Chromium oxide hydrate</i>	PG 18 Blaugrün; klassisches Grünpigment mit geringem Färbevermögen Viridian ; blue green; traditional green pigment with a low tinting strength
	18 505 ② ★★★★★ M ■	Chromoxidgrün stumpf <i>Chromium oxide green</i> <i>Hematite (Cr)</i>	Hämatit (Cr) <i>Hematite (Cr)</i>	PG 17 Olivstichiges Grün; klassisches Grünpigment mit hohem Deckvermögen <i>Olive tinted green; traditional green pigment with a high opacity</i>
	18 519 ① ★★★★★ M ☐	Böhmische grüne Erde <i>Bohemian green earth</i> <i>Earth pigment</i>	Erdpigment <i>Earth pigment</i>	PG 23 Braunstichiges Grün; natürliches Erdpigment mit geringem Färbevermögen <i>Brown tinted green; natural earth pigment with a low tinting strength</i>
	18 625 ① ★★★★★ M ■	Eisenoxidgelb <i>Ferrite yellow</i> <i>Iron oxide hydrate</i>	Eisenoxidhydrat <i>Iron oxide hydrate</i>	PY 42 Ockergelb; synthetische Variante zum natürlichen Ocker ; deutlich farbstärker <i>Ochre; synthetic alternative to Natural ochre; clearly stronger in colour</i>
	18 617 ① ★★★★★ M ☑	Lichter Ocker <i>Yellow ochre</i> <i>Earth pigment</i>	Erdpigment <i>Earth pigment</i>	PY 43 Ockergelb; natürliches Erdpigment <i>Ochre; natural earth pigment</i>
	18 623 ① ★★★★★ M ☑	Siena natur <i>Raw Sienna</i> <i>Earth pigment</i>	Erdpigment <i>Earth pigment</i>	PBr 7 Rotbraun; natürliches Erdpigment <i>Red brown; natural earth pigment</i>
	18 621 ① ★★★★★ M ☑	Goldocker <i>Gold ochre</i> <i>Earth pigment</i>	Erdpigment <i>Earth pigment</i>	PY 43 Rotstichiges Ockergelb; natürliches Erdpigment <i>Red tinted ochre; natural earth pigment</i>
	18 679 ① ★★★★★ M ☑	Siena gebrannt <i>Burnt Sienna</i> <i>Calcinated earth pigment</i>	Erdpigment gebrannt <i>Calcinated earth pigment</i>	PBr 7 Braunrot; natürliches Erdpigment mit mittlerer Farbstärke <i>Brown red; natural earth pigment with a medium colour strength</i>







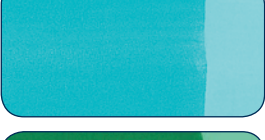



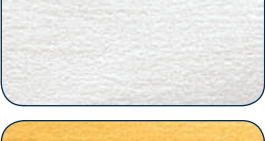
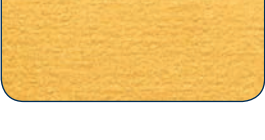
48 Pigmente / pigments in 100 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description
	18 649 ① Englishchrot hell ★★★★★ M <i>English red light</i> ■ K	Eisenoxid <i>Iron oxide</i>	PR 101	Eisenoxidrot, Marsrot ; orangestichiges Braunrot; synthetische, farbstärkere Variante zu rotbraunen Erdpigmenten Iron oxide red/Mars red ; orange tinted brown red; synthetic and stronger in colour alternative to red brown earth pigments
	18 655 ① Terra Pozzuoli ★★★★★ M <i>Pozzuoli earth</i> ■ K	Eisenoxid <i>Iron oxide</i>	PR 101	Braunrot; synthetische, farbstärkere Variante des natürlichen roten Erdpigmentes ; etwas rotstichiger und dunkler als Englishchrot hell 18 649 <i>Brown red; synthetic and stronger in colour alternative to natural red earth pigments; a bit more red tinted and deeper than English red light 18 649</i>
	18 645 ① Pompejanischrot ★★★★★ M <i>Pompeian red</i> ■ K	Eisenoxid <i>Iron oxide</i>	PR 101	Braunrot; synthetische Variante zur gebrannten Toscanischen Erde ; deutlich farbstärker <i>Brown red; synthetic alternative to Burnt tuscan earth; clearly stronger in colour</i>
	18 647 ① Caput mortuum dunkel ★★★★★ M <i>Caput mortuum deep</i> ■ K	Eisenoxid <i>Iron oxide</i>	PR 101	Violettstichiges Braunrot <i>Violet tinted brown red</i>
	18 682 ① Umbra natur, grünlich ★★★★★ M <i>Raw umber greenish</i> ■ KI	Erdpigment <i>Earth pigment</i>	PBr 7	Grünstichiges Braun; natürliches Erdpigment mit geringem Färbevermögen <i>Green tinted brown; natural earth pigment with a low tinting strength</i>
	18 683 ① Umbra gebrannt ★★★★★ M <i>Burnt umber</i> ■ KI	Erdpigment gebrannt <i>Calcinated earth pigment</i>	PBr 7	Tiefes rötliches Braun; natürliches Erdpigment mit mittlerer Farbstärke <i>Deep reddish brown; natural earth pigment with a medium strength in colour</i>
	18 675 ① Cassler/Vandyckbraun ★★★ O <i>Cassler/Vandyke brown</i> ■	Braunkohle <i>Brown coal</i>	NBr 8	Kölnische Erde/Kohlebraun ; tiefes Braun; natürliches Braunpigment mit mittlerer Lichtechtheit Cologne earth/Coal brown ; deep brown; natural brown pigment with a medium lightfastness
	18 720 ① Graphit ★★★★★ M <i>Graphite</i> ■ K	Makrokristalliner Naturgraphit <i>Crystallized carbon</i>	PBk 10	Grauschwarz; natürliches Schwarzpigment mit silbrigem Schimmer <i>Grey black; natural black pigment with silveriness</i>
	18 722 ① Rebenschwarz ★★★★★ O <i>Vine black</i> ■ K	Rußverkollerung <i>Nearly pure amorphous carbon of vegetable origin</i>	PBk 8	Kernschwarz ; Schwarz; natürliches Schwarzpigment pflanzlichen Ursprungs Core black ; natural black pigment vegetable origin
	18 723 ① Elfenbeinschwarz ★★★★★ O <i>Ivory black</i> ■ K	Verkohlungsprodukt tierischer Herkunft <i>Amorphous carbon produced by charring animal bones</i>	PBk 9	Beinschwarz/Knochenkohle ; Schwarz; natürliches Schwarzpigment tierischen Ursprungs Bone black/Bone charcoal ; natural black pigment bestial origin
	18 727 ① Eisenoxidschwarz ★★★★★ M <i>Mars black</i> ■ K	Eisenoxid <i>Iron oxide</i>	PBk 11	Standardschwarz ; Schwarz; für alle Maltechniken geeignet Basic black ; black, ideal for all painting techniques
	18 729 ① Lampenschwarz ★★★★★ O <i>Lamp black</i> ■ K	Ruß <i>Lamp black</i>	PBk 7	Flammruß ; Tiefschwarz; extrem feinteiliges Schwarzpigment mit sehr gutem Färbevermögen Channel black ; enormous finely divided black pigment with really great tinting strength

24 Pigmente / pigments EXTRA in 50 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description	
	18 234 ①	Nickeltitangelb	Rutil (Ti, Ni, Sb)	PY 53	Helles, grünstichiges Gelb
	★★★★★ M	Nickel yellow titanium	Rutil (Ti, Ni, Sb)		Light, green tinted yellow
	■ K				
	18 226 ①	Kadmiumgelb zitron	Cadmium-Zinksulfid	PY 35	Grünstichiges Gelb
	★★★★ M	Cadmium yellow lemon	Cadmium zinc sulfide		Green tinted yellow
	■ KI				
	18 227 ②	Kadmiumgelb hell	Cadmium-Zinksulfid	PY 35	Gelb
	★★★★★ M	Cadmium yellow light	Cadmium zinc sulfide		Yellow
	■ KI				
	18 236 ①	Chromtitangelb	Rutil (Ti, Cr, Sb)	PBr 24	Bräunliches Gelb
	★★★★★ M	Chrome yellow titanium	Rutil (Ti, Cr, Sb)		Brownish yellow
	■ K				
	18 229 ②	Kadmiumgelb dunkel	Cadmium-Sulfoselenid	PO 20	Orangegelb
	★★★★★ M	Cadmium yellow deep	Cadmiumsulfoselenide		Orange yellow
	■ KI				
	18 231 ③	Kadmiumorange	Cadmium-Sulfoselenid	PO 20	Orange
	★★★★★ M	Cadmium orange	Cadmiumsulfoselenide		Orange
	■ KI				
	18 360 ②	Kadmiumrot hell	Cadmium-Sulfoselenid	PO 20	Gelbliches Rot
	★★★★★ M	Cadmium red light	Cadmiumsulfoselenide		Yellowish red
	■ KI				
	18 361 ③	Kadmiumrot dunkel	Cadmium-Sulfoselenid	PR 108	Bläuliches Rot
	★★★★★ M	Cadmium red deep	Cadmiumsulfoselenide		Bluish red
	■ KI				
	18 363 ③	Cochenillerot	Chinacridon	PR 209	Chinacridonrot ; dunkles, bläuliches Rot; lichtechte Alternative zum echten Karminrot
	★★★★ O	Cochineal red	Quinacridone		Quinacridone red ; deep, bluish red; lightfast alternative to genuine carmine red
	□				
	18 368 ②	Krapprot dunkel	Perylen	PR 179	Perylenrot ; dunkles, blaustichiges Rot; lichtechte Alternative zum echten Krapplack
	★★★★★ O	Madder red deep	Perylene		Perylene red ; deep, blue tinted red; lightfast alternative to genuine Madder lake
	▣ K				
	18 481 ②	Chinacridonviolett	Chinacridon	PV 19	Dunkles Rotviolett; hohe Farbstärke
	★★★★ O	Quinacridone violet	Quinacridone		Deep red violet; high tinting strength
	▣ K				
	18 482 ③	Kobaltviolett	Cobaltphosphat	PV 14	Helles Rotviolett; klassisches Violett pigment mit geringer Farbstärke
	★★★★★ M	Cobalt violet	Cobalt phosphate		Light red violet; traditional violet pigment with low tinting strength
	▣				

24 Pigmente / pigments EXTRA in 50 ml

Nr. No.	Pigment Pigment	Chem. Zusammensetzung Chemical components	C.I.-Nr. C.I.-No.	Beschreibung Description
	18 483 ① Manganviolett ★★★★ M <i>Manganese violet</i> ☐	Mangan-Ammoniumphosphat <i>Manganese ammonium pyrophosphate</i>	PV 16	Rotviolett; klassisches Violett pigment mit geringer Farbstärke <i>Red violet; traditional violet pigment with low tinting strength</i>
	18 487 ② Coelinblau ★★★★★ M <i>Cerulean blue</i> ☐ K	Spinell (Co, Sn) <i>Spinel (Co, Sn)</i>	PB 35	Grünstichiges helleres Blau <i>Green tinted light blue</i>
	18 489 ① Kobaltblau hell ★★★★★ M <i>Cobalt blue light</i> ☐ K	Spinell (Co, Al) <i>Spinel (Co, Al)</i>	PB 28	Helleres Blau <i>Lighter blue</i>
	18 494 ② Kobaltblau dunkel ★★★★★ M <i>Cobalt blue deep</i> ☐	Phenakit (Co, Zn, Si) <i>Phenacite (Co, Zn, Si)</i>	PB 74	Rotstichiges Blau; dunkler als Kobaltblau hell 18 489 <i>Red tinted blue; deeper than Cobalt blue light 18 489</i>
	18 495 ① Phthaloblau rötlich ★★★★ O <i>Phthalo blue reddish</i> ☐ K	Phthalocyanin (Cu) <i>Phthalocyanine (Cu)</i>	PB 15 : 6	Helio blau ; rotstichiges Blaupigment mit sehr hohem Färbevermögen <i>Helio blue; red tinted blue pigment with high tinting strength</i>
	18 496 ① Phthalotürkis ★★★★ O <i>Phthalo turquoise</i> ☐ K	Phthalocyanin <i>Phthalocyanine</i>	PB 16	Helio türkis ; grünstichiges Blaupigment mit sehr hohem Färbevermögen <i>Helio turquoise; green tinted blue pigment with a high tinting strength</i>
	18 501 ③ Kobalttürkis ★★★★★ M <i>Cobalt turquoise</i> ■ K	Spinell (Co, Ni, Zn, Ti) <i>Spinel (Co, Ni, Zn, Ti)</i>	PG 50	Türkis <i>Turquoise</i>
	18 509 ② Kobaltgrün hell ★★★★★ M <i>Cobalt green light</i> ■ K	Spinell (Co, Zn) <i>Spinel (Co, Zn)</i>	PG 19	Orangestichiges Grün; heller und deutlich gelblicher als Kobaltgrün dunkel 18 502 <i>Orange tinted green; lighter and clearly more yellowish than Cobalt green deep 18 502</i>
	18 502 ② Kobaltgrün dunkel ★★★★★ M <i>Cobalt green deep</i> ■ K	Spinell (Co, Cr) <i>Spinel (Co, Cr)</i>	PG 26	Dunkles, orangestichiges Grün <i>Deep, orange tinted green</i>
	18 508 ① Phthalogrün hell ★★★★ O <i>Phthalo green light</i> ☐ K	Phthalocyanin (Cu, Cl, Br) <i>Phthalocyanine (Cu, Cl, Br)</i>	PG 36	Helio grün ; gelbstichiges Grün pigment mit sehr hohem Färbevermögen <i>Helio green; yellow tinted green pigment with high tinting strength</i>
	18 901 ① Sterling Silber ★★★★★ M <i>Sterling Silver</i> ☐ K	Perlglanzpigment <i>pearlescent pigment</i>		Silberweiß mit schimmerndem Metalleffekt; bitte Farbpasten nur anrühren und nicht anreiben! <i>Silver white with shimmering metallic effect; please stir the colour pastes instead of grinding them!</i>
	18 931 ① Brillant Gold ★★★★★ M <i>Brilliant Gold</i> ☐ K	Perlglanzpigment <i>pearlescent pigment</i>		Goldgelb mit schimmerndem Metalleffekt; bitte Farbpasten nur anrühren und nicht anreiben! <i>Golden yellow with shimmering metallic effect; please stir the colour pastes instead of grinding them!</i>

Allgemeines zum Anreiben von Pigmenten mit Bindemitteln

Benötigt dazu wird ein Mörser mit Pistill oder eine spezielle Anreibplatte aus angerautem Glas mit einem Glasläufer. Starten Sie am besten mit einer teelöffelgroßen Menge Künstler-Pigment in der Mitte der Reibplatte. Zu dieser geben Sie unter stetigem Mischen mit dem Palettmesser nun so viel des jeweiligen Bindemittels hinzu, dass eine geschmeidige Farbpaste entsteht. Anschließend erfolgt das eigentliche Anreiben der Malfarben durch kreisende Bewegungen mit dem Läufer. Achtung: Je nach verwendetem Pigment variiert der Bindemittelbedarf erheblich! Das richtige Verhältnis Pigment/Bindemittel erkennt man daran, dass die getrockneten Farbaufstriche eine glatte Oberfläche haben und beim Reiben mit dem trockenen Handballen nicht abfärben. Solche „kreibenden“ Mischungen benötigen mehr Bindemittel.

Reine Ölfarben

Zum Anreiben von Buntpigmenten eignen sich vor allem **Leinöl, gereinigt** 50 015 und **Leinöl, kalt geschlagen** 50 027. Für weiße und helle Farbtöne empfehlen wir **Sonnenblumenöl** 50 025 und/oder **Mohnöl** 50 016. Letztere trocknen zwar langsamer als die beiden Leinölvarianten, zeigen aber eine deutlich geringere Tendenz zum Gelben. Verwendet man **Leinöl-Standöl** 50 005, so erhält man widerstandsfähigere und elastischere Farbfilme, die ebenfalls kaum gelben. Die Zugabe von **Leinöl-Firnis** 50 014 beschleunigt die Trocknung im Vergleich zu reinen Leinölfarben, steigert aber die Gefahr zu gelben. Die Trocknung der Ölfarben kann übrigens durch tropfenweise (!) Zugabe von **Siccativ, dunkel** 50 021 deutlich beschleunigt werden. Unser Tipp: Am einfachsten funktioniert die Herstellung von Ölfarben mit dem gebrauchsfertig eingestellten **Öl-Bindemittel Ready-to-use** 50 810.

Wässrige Malfarben: Aquarellfarben, Gouachefarben, Acrylfarben und Linoldruckfarben

Zur Herstellung von Aquarell- und Gouachefarben empfehlen wir **Gummi arabicum** 50 302, für Acrylfarben **Acryl Bindemittel** 50 555. Unser Tipp: Bei all diesen Maltechniken fördert ein Tropfen **Ochsengalle** 50 031 die Pigmentbenetzung. Aber auch für diese Farbtypen gibt es die besonders einfach anzuwendenden **Ready-to-use-Bindemittel: Aquarell-Bindemittel Ready-to-use** 50 820, **Gouache-Bindemittel Ready-to-use** 50 830 und **Acryl-Bindemittel Ready-to-use** 50 840, zudem ein **Linol-Bindemittel Ready-to-use** 50 850.

Ready-to-use-Bindemittel

Eine ideale Basis zur Herstellung eigener Künstlerfarben gerade für Anfänger bieten unsere gebrauchsfertig eingestellten **Ready-to-use-Bindemittel**. Mit ihnen mischen Sie im Handumdrehen

- pastose Ölfarben (**Öl-Bindemittel Ready-to-use** 50 810)
- seidenmatte Acrylfarben (**Acryl-Bindemittel Ready-to-use** 50 840)
- lasierende Aquarellfarben (**Aquarell-Bindemittel Ready-to-use** 50 820)
- samtartige Gouachefarben (**Gouache-Bindemittel Ready-to-use** 50 830)
- konturscharfe Linoldruckfarben (**Linol-Bindemittel Ready-to-use** 50 850)

Und so wird's gemacht: Verreiben Sie eine teelöffelgroße Menge Pigment mit dem **Ready-to-use**-Produkt Ihrer Wahl zu einer geschmeidigen Farbpaste (ideale Werkzeuge: Malmesser, Anreibplatte aus Glas). Auch hier ist das Mischungsverhältnis Bindemittel zu Pigment stark abhängig von der Art des Farbmittels. Unsere Empfehlung:

- Starten Sie beim **Öl-Bindemittel Ready-to-use** 50 810 mit ca. 1 Teil Bindemittel und 1 Teil Pigment (nach Gewicht),
- bei allen anderen **Ready-to-use**-Bindemitteln 50 820, 50 830, 50 840 und 50 850 mit ca. 2 Teilen Bindemittel und 1 Teil Pigment (nach Gewicht) – siehe Schritt für Schritt-Anleitung.

Temperafarben: Eitemperafarben und Kaseitemperafarben

Die folgenden Rezepturen sind Anhaltspunkte für 1 Teil Künstler-Pigment:

• ölarme Eitempera:

Für eine ölarme, magere Bindemittel-Variante einer Eitempera vermischt man 1 Teil gut gerührtes Vollei, 1/2 Teil **Leinöl-Firnis** 50 014, 1/2 Teil **Dammarfirnis, glänzend** 50 008 mit 1 Teil Wasser.

• öltreiche Eitempera:

Die öltreiche, fette Variante enthält 1 Teil gut gerührtes Vollei, 1 Teil **Leinöl-Firnis** 50 014 und 1 Teil Wasser.

• ölarme Kaseitempera:

Dem **Kasein-Bindemittel** 50 088 werden 10% **Leinöl-Standöl** 50 005 und 10% einer Harzlösung – z. B. 1:3-Lösungen von **Dammar in Stücken** 50 093 oder **Venezianisches Terpentinharz** 50 073 in **Balsam-Terpentinöl** 50 024 – zugegeben.

• öltreiche Kaseitempera:

Bei einer fetten Kaseitempera ohne Harzanteil können dem **Kasein-Bindemittel** 50 088 insgesamt bis zu 30% **Leinöl-Standöl** 50 005 zugegeben werden.

Übrigens: Alle hier beschriebenen Tempera-Variationen können nach dem Anreiben mit 3 – 4 Teilen Wasser verdünnt werden. Zudem besteht natürlich die Möglichkeit, den fertigen Mixturen weitere Öle und gelöste Harze zuzumischen!

Aufbewahrung der selbstgemischten Künstlerfarben

Nicht immer ist es möglich, die selbstangeriebene Malfarben in einer Sitzung zu verbrauchen. Ideal zur temporären Aufbewahrung sind z. B. beschriftete Schraubdeckelgläser. Aber aufgepasst: Gerade wasserhaltige Mixturen wie z. B. Acryl-, Aquarell-, Gouache- und Linoldruckfarben sollten nur wenige Tage – am besten bei Raumtemperatur – gelagert und vor ihrer Verwendung kurz umgerührt werden.

Schritt für Schritt mit Acryl-Bindemittel Ready-to-use (50 840)



1 Teil Pigment auf Glasplatte anhäufen/
Start with 1 part pigment on a grinding plate



2 Teile Acryl-Bindemittel Ready-to-use dazugeben/
Add 2 parts of acrylic binder Ready-to-use

Binders and formulations

General information for the grinding of pigments with binder

You are ought to have a mortar and a pestle or a grinding plate with a glass muller made of roughened glass. To start the process, leave a tea spoon sized doze of the pure artists' pigment in the middle of the grinding plate. Thereafter add the desired binders under constant mixing, until a supple colour-paste has been developed. Then follows the real grinding of the colours, by circular movements with the glass muller. Attention: The amount of binder varies to the used pigment! The right proportions have been reached if dried streaks of paint have a smooth surface and do not come off when rubbed with the dry heel of the hand. Mixtures with a "chalky" surface need more binder.

Pure oil colours

For the grinding of coloured pigments, **linseed oil, purified 50 015** and **linseed oil, cold pressed 50 027** are appropriate. For white and all other lighter colours, **sunflower oil 50 025** and/or **poppy oil 50 016** are recommendable. The latter are drying much slower than the variations of linseed oil, but are showing a considerable lower tendency for yellowing. By using **stand linseed oil 50 005** you obtain a more imperishable and elastic film, which also is rarely yellowing. In comparison to pure linseed-oil colours, the addition of **linseed oil varnish 50 014** accelerates the drying, but raises also their yellowing-tendency. By the way, the drying of oil colours could be accelerated considerably by a drop wise (!) addition of **siccative, dark 50 021**. The truly easiest way for creating an oil-colour is, to utilize the ready-to-use adjusted **oil binder Ready-to-use 50 810**.

Aqueous colours: water-colours, gouache colours, acrylic colours and linoprint colours

For the creation of water-colours and gouache colours, we recommend you to use **gum arabic 50 302**, for acrylic colours to use **acrylic binder 50 555**. For poor wettable pigments the usage of a drop of **oxgall 50 031** can be helpful. By the way, we are offering easy to handle **Ready-to-use-binder** also for these types of colours: **Water-colour binder Ready-to-use 50 820**, **gouache binder Ready-to-use 50 830**, **acrylic binder Ready-to-use 50 840** and **linoprint binder Ready-to-use 50 850**.

Ready-to-use binders

Our **Ready-to-use-binders** provide the ideal basis for making your own paints at home in your own studio. You are able to easy mix the following colours:

- Paste-type oil colours (**Oil binder Ready-to-use, 50 810**)
- Satin-matt acrylic colours (**Acrylic binder Ready-to-use, 50 840**)
- Translucent water-colours (**Water-colour binder Ready-to-use, 50 820**)
- Velvety gouache colours (**Gouache binder Ready-to-use, 50 830**)
- High-definition linoprint colours (**Linoprint binder Ready-to-use, 50 850**)

Here's how to do it: Grind a teaspoonful of pigment with the **Ready-to-use-product** of your choice to a smooth paste (ideal tools: painting knife and grinding plate made of glass). Also in this case the mixing ratio of binder to pigment very much depends on the type of paint:

- Start off with **oil binder Ready-to-use 50 810** with approx. 1 part binder to 1 part pigment (by weight),
- for all other **Ready-to-use-binders (50 820, 50 830, 50 840 and 50 850)**, use approx. 2 parts binder to one part pigment (by weight) – look for step by step introduction.

Tempera colours: egg tempera colours and casein tempera colours

The following formulas provide an informative basis for 1 part pigment:

• small oil-volume egg tempera:

For a small oil-volume/lean binder alternative of an egg tempera use one part of a well stirred egg, half part **linseed oil varnish 50 014**, half part **dammar varnish 50 008** and one part water.

• oil-rich egg tempera:

The oil-rich, fatty alternative contains one part well stirred egg, one part **linseed oil varnish 50 014** and one part water.

• small oil-volume casein tempera:

For creating a lean casein tempera it is necessary to add 10% of **stand linseed oil 50 005** and 10% of a resin dilution – e.g. 1:3 dilutions of **dammar in pieces 50 093** or **venetian turpentine resin 50 073** into **gum spirit of turpentine 50 024** – to **casein binding medium 50 088**.

• oil-rich casein tempera:

For a fatty casein tempera without resin 30% of **stand linseed oil 50 005** can be mixed into **casein binding medium 50 088**.

By the way, the resultant tempera binders can be diluted with 3 – 4 parts water after grinding. And of course: Additional oils and dissolved resins can be emulsified in the finished tempera colours.

Storage of homemade artists' colours

Honestly it's not always possible to consume your homemade artists' colour in a single painting session. Ideal for temporary storage are labelled screw-top jars. Attention: aqueous mixtures such as acrylic, water-colour, gouache and linoprint paints should only be stored for a few days – ideally at room temperature.

Step by step with acrylic binder Ready-to-use (50 840)

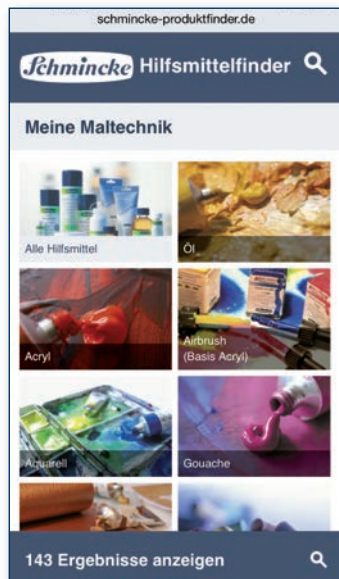


Pigment und Bindemittel mit einem Palettmesser vermengen/
Mix pigment and binder thoroughly with a painting knife



Bei Bedarf die Masse mit einem Glasläufer anreiben/
If necessary grind with a glass muller

Maltechnik / Painting technique	Art.Nr. / Art.-No.	Produkt	Product
Öl / Oil	50 027	Leinöl, kalt geschlagen	linseed oil, cold pressed
	50 015	Leinöl, gereinigt	linseed oil, purified
	50 014	Leinöl-Firnis	linseed oil varnish
	50 005	Leinöl-Standöl	stand linseed oil
	50 025	Sonnenblumenöl	sunflower oil
	50 016	Mohnöl, gebleicht	poppy oil, bleached
	50 810	Öl-Bindemittel Ready-to-use	oil binder Ready-to-use
Acryl / Acrylic	50 555	Acryl-Bindemittel	acrylic binder
	50 840	Acryl-Bindemittel Ready-to-use	acrylic binder Ready-to-use
Aquarell, Gouache / Water-colour, Gouache	50 302	Gummi arabicum	gum arabic
	50 820	Aquarell-Bindemittel Ready-to-use	water-colour binder Ready-to-use
	50 830	Gouache-Bindemittel Ready-to-use	gouache binder Ready-to-use
Linoldruck / Linoprint	50 850	Linol-Bindemittel Ready-to-use	linoprint binder Ready-to-use
Tempera / Tempera	50 088	Kasein-Bindemittel	casein binding medium
	50 008	Dammarfirnis, glänzend	dammar varnish, glossy
	50 093	Dammar in Stücken	dammar in pieces
	50 073	Venezianisches Terpentinharz	venetian turpentine resin
Weitere Hilfsmittel / Further mediums	50 031	Ochsengalle	oxgall
	50 021	Siccativ, dunkel	siccative, dark
	50 019	Terpentinersatz	turpentine substitute
	50 024	Balsam-Terpentinöl, destilliert	gum spirit of turpentine, distilled
	50 102	Terpentinöl, gereinigt	oil of turpentine, refined



Weitergehende Produktinformationen, Technische Merkblätter und Sicherheitsdatenblätter entnehmen Sie bitte unserer Homepage www.schmincke.de oder aber unserem interaktiven Hilfsmittelfinder im Internet unter www.schmincke-produktfinder.de. Über das umfangreiche Hilfsmittel-Sortiment informiert Sie auch unsere Broschüre 95 450 ausführlich. Zudem möchten wir Sie auf die Broschüre zu unserem Sortiment „Echte Künstler-Bronzen, Sorte 15“ 95 415 aufmerksam machen.

For further product information, technical data sheets and safety data sheets please refer to our homepage www.schmincke.de or to our interactive medium finder on the internet www.schmincke-produktfinder.de. Also the Schmincke mediums brochure No. 95 450 gives you detailed information about our painting mediums. Please also have a closer view to the brochure for our assortment "Genuine Artists' Bronzes, series 15" No. 95 415.

deutsch



english



Die Farbkarten dieses Prospektes sind ein 8-Farben-Offsetdruck – also fast farbgenau. Wegen ständiger Bemühungen um weitere Verbesserungen und wegen gelegentlicher Veränderungen im Rohstoff-, insbesondere Pigmentmarkt, sind begrenzte Farbtrennschwankungen zwischen Farbkarten und Etiketten möglich sowie Textabweichungen aufgrund unterschiedlicher Druckdaten.

Die beschriebenen Produkteigenschaften und Anwendungsbeispiele sind im Schmincke-Labor getestet. Die Angaben basieren auf unseren derzeitigen technischen Erkenntnissen und Erfahrungen. Aufgrund der Anwendungsvielfalt bezüglich der Maltechniken, Materialien und Verarbeitungsbedingungen sowie zahlreicher möglicher Einflüsse stellen die Informationen allgemeine Anwendungsbereiche dar. Eine rechtlich verbindliche Zusicherung bestimmter Eigenschaften oder der Eignung für einen bestimmten Einsatzzweck kann aus unseren Angaben nicht abgeleitet werden; daher ist der Gebrauch der Produkte auf die speziellen Bedingungen des Anwenders abzustimmen und durch Versuche zu überprüfen. Aus diesen Gründen können wir keine Gewährleistung für Produkteigenschaften und/oder Haftung für Schäden übernehmen, die in Verbindung mit der Anwendung unserer Produkte entstehen.

This brochure has been printed in a 8-colour offset print – that means tones are only nearly identical with original colours. Due to steady efforts for further improvements and changes in the raw material and pigment field slight colour deviations and differences in wording are possible between printed colour charts and labels according to differing printing dates.

The product characteristics and application examples described have been tested in the Schmincke laboratory. The details are based on our current technical knowledge and experience. Owing to the diversity of painting techniques, materials, processing conditions and numerous other possible influences, the information applies to general areas of application. No legally binding guarantee of specific characteristics or of suitability for a specific purpose can be taken from our information; consequently, the use of products must be adapted to the specific conditions of the user and must be checked by doing tests. For this reason, we cannot give any warranty for product characteristics or accept any liability for any damages arising in connection with the use of our products.

Sicherheitsdatenblatt gemäß 1907/2006/EG

Artikel: **series 17 - pastel**

Version: 2

Schmincke

Feinste Künstlerfarben

Druckdatum 10.11.2014

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Name: identification of the substance series 17 - pastel

1.2 Relevant identified uses of the substance or mixture and uses advised against

General use Products for creation of art.

1.3 Details of the supplier of the safety data sheet

Manufacturer H. Schmincke & Co. GmbH & Co. KG
Otto-Hahn-Str. 2
D - 40699 Erkrath
Tel. +49 (0) 211-2509-0
Fax. +49 (0) 211-2509-497
info@schmincke.de
www.schmincke.de

Dept. responsible for information Schmincke-lab:
mo-th 8.00-16.30,fr 8.00-13.30
Tel. +49 (0) 211-2509-474
labor@schmincke.de

1.4 Emergency telephone number

* Name Emergencycall Berlin
(24h - counseling in german and english)
* Phone # +49 (0) 30 / 30 68 67 90

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Nature of Hazard Does not require a hazard labelling warning label, but the normal safety precautions for handling of chemicals must be observed.
Avoid dust formation.

2.2 Label elements

Labelling (67/548/EEC or 1999/45)

Nature of Hazard The product does not require a hazard warning label in accordance with EC Directives.

SECTION 3: Composition / information on ingredients

3.1 Substances

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Chemical characterization
3.2 Mixtures

pigments with different chemical composition

Additional information

further information: see appendix

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In case of problems seek medical advice and show the package or label

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas. Compatible with all usual extinguishing media.

SECTION 6: Accidental release measures

6.3 Methods and material for containment
and cleaning up

Additional information

When picked up, treat material as prescribed under heading "Disposal".

SECTION 7: Handling and storage

SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Occupational exposure controls

Respiratory protection

Breathing apparatus in the event of high concentrations. Do not inhale dust.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and
chemical properties

Physical state

solid

Colour

various

Odour

almost odourless

SECTION 10: Stability and reactivity

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

General remarks

General remarks

By appropriate use of the product no health damage is known.

SECTION 12: Ecological information

12.6 Other adverse effects

General information

Moderately/partially biodegradable

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Recommendation

080112 waste paint and varnish other than those mentioned in 080111

SECTION 14: Transport information

14.6 Special precautions for user

Further information

The product does not constitute a hazardous substance in national / international road, rail, sea and air transport.

SECTION 15: Regulatory information

SECTION 16: Other information

Further information

This information is based on our current state of knowledge and describes the security standards applicable to our product for the purpose provided. The information provided here does not constitute a legally binding warranty of specific characteristics or of suitability for a specific application use of the product is thus to be adapted to the user's special conditions and checked by preliminary tests. We are thus unable to guarantee product characteristics or accept an liability for damage arising in connection with the use of our products.

Appendix for material safety data sheet no.: 17 000 000

- Pastels Finest, extra-soft artists' pastels -

side 1 of 1

17001069	white	PW 6	Titanium dioxide	13463-67-7
17002068	permanent yellow 1 lemon B	PY 3; PBk 11	Monoazo; Iron oxide black	6486-23-3; 1317-61-9
17002069	permanent yellow 1 lemon D	PW 6; PY 3	Titanium dioxide; Monoazo	13463-67-7; 6486-23-3
17002073	permanent yellow 1 lemon H	PW 6; PY 3	Titanium dioxide; Monoazo	13463-67-7; 6486-23-3
17002077	permanent yellow 1 lemon M	PW 6; PY 3	Titanium dioxide; Monoazo	13463-67-7; 6486-23-3
17002079	permanent yellow 1 lemon O	PW 6; PY 3	Titanium dioxide; Monoazo	13463-67-7; 6486-23-3
17003068	permanent yellow 2 light B	PY 74; PY 138; PBk 11	Monoazo; Chinophthalone; Iron oxide black	6358-31-2; 56731-19-2; 1317-61-9
17003069	permanent yellow 2 light D	PY 74; PY 138	Monoazo; Chinophthalone	6358-31-2; 56731-19-2
17003073	permanent yellow 2 light H	PW 6; PY 74; PY 138	Titanium dioxide; Monoazo; Chinophthalone	13463-67-7; 6358-31-2; 56731-19-2
17003077	permanent yellow 2 light M	PW 6; PY 74	Titanium dioxide; Monoazo	13463-67-7; 6358-31-2
17003079	permanent yellow 2 light O	PW 6; PY 74	Titanium dioxide; Monoazo	13463-67-7; 6358-31-2
17004068	permanent yellow 3 deep B	PY 83; PBk 11	Diaryl; Iron oxide black	5567-15-7; 1317-61-9
17004069	permanent yellow 3 deep D	PY 83; PBk 11	Diaryl; Iron oxide black	5567-15-7; 1317-61-9
17004073	permanent yellow 3 deep H	PY 83; PBk 11	Diaryl; Iron oxide black	5567-15-7; 1317-61-9
17004077	permanent yellow 3 deep M	PY 83; PBk 11	Diaryl; Iron oxide black	5567-15-7; 1317-61-9
17004079	permanent yellow 3 deep O	PY 83; PBk 11	Diaryl; Iron oxide black	5567-15-7; 1317-61-9
17005068	orange deep B	PO 43; PO 61; PBk 11	Perinone; Isoindoline; Iron oxide black	4424-06-0; 76168-74-6; 1317-61-9
17005069	orange deep D	PO 43; PO 61	Perinone; Isoindoline	4424-06-0; 76168-74-6
17005073	orange deep H	PW 6; PO 43; PO 61	Titanium dioxide; Perinone; Isoindoline	13463-67-7; 4424-06-0; 76168-74-6
17005077	orange deep M	PW 6; PO 43; PO 61	Titanium dioxide; Perinone; Isoindoline	13463-67-7; 4424-06-0; 76168-74-6
17005079	orange deep O	PW 6; PO 43; PO 61	Titanium dioxide; Perinone; Isoindoline	13463-67-7; 4424-06-0; 76168-74-6
17007068	titanium yellow B	PY 53; PBk 11	Rutile (Ti, Ni, Sb); Iron oxide black	8007-18-9; 1317-61-9
17007069	titanium yellow D	PY 53	Rutile (Ti, Ni, Sb)	8007-18-9
17007073	titanium yellow H	PW 6; PY 53	Titanium dioxide; Rutile (Ti, Ni, Sb)	13463-67-7; 8007-18-9
17007077	titanium yellow M	PW 6; PY 53	Titanium dioxide; Rutile (Ti, Ni, Sb)	13463-67-7; 8007-18-9
17007079	titanium yellow O	PW 6; PY 53	Titanium dioxide; Rutile (Ti, Ni, Sb)	13463-67-7; 8007-18-9
17008068	vanadium yellow light B	PY 74; PY 138; PBk 11	Monoazo; Chinophthalone; Iron oxide black	6358-31-2; 56731-19-2; 1317-61-9
17008069	vanadium yellow light D	PY 74; PY 138; PBk 11	Monoazo; Chinophthalone; Iron oxide black	6358-31-2; 56731-19-2; 1317-61-9
17008073	vanadium yellow light H	PW 6; PY 138; PY 184	Titanium dioxide; Chinophthalone; Bismutvanadat	13463-67-7; 56731-19-2; 14059-33-7
17008077	vanadium yellow light M	PW 6; PY 184	Titanium dioxide; Bismuth vanadate	13463-67-7; 14059-33-7
17008079	vanadium yellow light O	PW 6; PY 184	Titanium dioxide; Bismuth vanadate	13463-67-7; 14059-33-7
17009068	vanadium yellow deep B	PY 155; PBk 11	Disazo; Iron oxide black	68516-73-4; 1317-61-9
17009069	vanadium yellow deep D	PY 155; PY 184	Disazo; Bismuth vanadate	68516-73-4; 14059-33-7
17009073	vanadium yellow deep H	PW 6; PY 155; PY 184	Titanium dioxide; Disazo; Bismuth vanadate	13463-67-7; 68516-73-4; 14059-33-7
17009077	vanadium yellow deep M	PW 6; PY 155; PY 184	Titanium dioxide; Disazo; Bismuth vanadate	13463-67-7; 68516-73-4; 14059-33-7
17009079	vanadium yellow deep O	PW 6; PY 155; PY 184	Titanium dioxide; Disazo; Bismuth vanadate	13463-67-7; 68516-73-4; 14059-33-7
17010068	orange light B	PO 62; PBk 11	Benzimidazolone; Iron oxide black	75601-68-2; 1317-61-9
17010069	orange light D	PO 62	Benzimidazolone	75601-68-2
17010073	orange light H	PW 6; PY 83; PO 62	Titanium dioxide; Diaryl; Benzimidazolone	13463-67-7; 5567-15-7; 75601-68-2
17010077	orange light M	PW 6; PY 83; PO 62	Titanium dioxide; Diaryl; Benzimidazolone	13463-67-7; 5567-15-7; 75601-68-2
17010079	orange light O	PW 6; PY 83; PO 62	Titanium dioxide; Diaryl; Benzimidazolone	13463-67-7; 5567-15-7; 75601-68-2
17013068	ochre light B	PY 42; PBr 24; PBk 11	Hydrated iron oxide; Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 68186-90-3; 1317-61-9
17013069	ochre light D	PY 42; PG 17; PBr 24	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb)	20344-49-4; 1308-38-9; 68186-90-3
17013073	ochre light H	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17013077	ochre light M	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17013079	ochre light O	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17014068	gold ochre B	PY 42; PBr 24; PBk 11	Hydrated iron oxide; Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 68186-90-3; 1317-61-9

Appendix for material safety data sheet no.: 17 000 000

- Pastels Finest, extra-soft artists' pastels -

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17014069	gold ochre D	PY 42; PG 17; PBr 24	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb)	20344-49-4; 1308-38-9; 68186-90-3
17014073	gold ochre H	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17014077	gold ochre M	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17014079	gold ochre O	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17016068	flesh ochre B	PY 42; PBr 24; PBk 11	Hydrated iron oxide; Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 68186-90-3; 1317-61-9
17016069	flesh ochre D	PY 42; PBr 24	Hydrated iron oxide; Rutile (Ti, Cr, Sb)	20344-49-4; 68186-90-3
17016073	flesh ochre H	PW 6; PY 42; PR 101; PBr 24	Titanium dioxide; Hydrated iron oxide; Iron oxide; Rutile (Ti, Cr, Sb)	13463-67-7; 20344-49-4; 1309-37-1; 68186-90-3
17016077	flesh ochre M	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17016079	flesh ochre O	PW 6; PY 42	Titanium dioxide; Hydrated iron oxide	13463-67-7; 20344-49-4
17017068	orange ochre B	PY 42; PY 119; PR 101; PBk 11	Hydrated iron oxide; Spinel (Zn, Fe); Iron oxide; Iron oxide black	20344-49-4; 68186-90-3; 1309-37-1; 1317-61-9
17017069	orange ochre D	PY 42; PY 119	Hydrated iron oxide; Spinel (Zn, Fe)	20344-49-4; 68186-90-3
17017073	orange ochre H	PW 6; PY 42; PR 101; PBr 24	Titanium dioxide; Hydrated iron oxide; Iron oxide; Rutile (Ti, Cr, Sb)	13463-67-7; 20344-49-4; 1309-37-1; 68186-90-3
17017077	orange ochre M	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17017079	orange ochre O	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17018068	burnt Sienna B	PY 119; PR 101; PBr 6; PBr 24; PBk 11	Spinel (Zn, Fe); Iron oxide; Iron oxide; Rutile (Ti, Cr, Sb); Iron oxide black	68186-90-3; 1309-37-1; 72669-22-8; 68186-90-3; 1317-61-9
17018069	burnt Sienna D	PY 119; PR 101; PBr 6; PBr 24	Spinel (Zn, Fe); Iron oxide; Iron oxide; Rutile (Ti, Cr, Sb)	68186-90-3; 1309-37-1; 72669-22-8; 68186-90-3
17018073	burnt Sienna H	PW 6; PY 42; PR 101; PBr 6	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1; 72669-22-8
17018077	burnt Sienna M	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17018079	burnt Sienna O	PW 6; PY 42; PR 101; PBr 6	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1; 72669-22-8
17019068	burnt yellow ochre B	PY 42; PR 101; PBk 11	Hydrated iron oxide; Iron oxide; Iron oxide black	20344-49-4; 1309-37-1; 1317-61-9
17019069	burnt yellow ochre D	PY 42; PR 101	Hydrated iron oxide; Iron oxide	20344-49-4; 1309-37-1
17019073	burnt yellow ochre H	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17019077	burnt yellow ochre M	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17019079	burnt yellow ochre O	PW 6; PY 42; PR 101	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1
17021068	Pozzuoli earth B	PY 42; PR 101; PBk 11	Hydrated iron oxide; Iron oxide; Iron oxide black	20344-49-4; 1309-37-1; 1317-61-9
17021069	Pozzuoli earth D	PY 42; PR 101	Hydrated iron oxide; Iron oxide	20344-49-4; 1309-37-1
17021073	Pozzuoli earth H	PY 42; PR 101	Hydrated iron oxide; Iron oxide	20344-49-4; 1309-37-1
17021077	Pozzuoli earth M	PY 42; PR 101	Hydrated iron oxide; Iron oxide	20344-49-4; 1309-37-1
17021079	Pozzuoli earth O	PY 42; PR 101	Hydrated iron oxide; Iron oxide	20344-49-4; 1309-37-1
17022068	English red B	PY 42; PR 101; PBr 33; PBk 11	Hydrated iron oxide; Iron oxide; Spinel (Zn, Fe, Cr); Iron oxide black	20344-49-4; 1309-37-1; 68186-88-9; 1317-61-9
17022069	English red D	PY 42; PR 101; PBr 33	Hydrated iron oxide; Iron oxide; Spinel (Zn, Fe, Cr)	20344-49-4; 1309-37-1; 68186-88-9
17022073	English red H	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17022073	English red H	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17022079	English red O	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17023068	caput mortuum pale B	PR 101; PBk 11	Iron oxide; Iron oxide black	1309-37-1; 1317-61-9
17023069	caput mortuum pale D	PR 101	Iron oxide	1309-37-1
17023073	caput mortuum pale H	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17023077	caput mortuum pale M	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17023079	caput mortuum pale O	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17024068	caput mortuum deep B	PR 101; PBk 11	Iron oxide; Iron oxide black	1309-37-1; 1317-61-9
17024069	caput mortuum deep D	PR 101	Iron oxide	1309-37-1
17024073	caput mortuum deep H	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17024077	caput mortuum deep M	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17024079	caput mortuum deep O	PW 6; PR 101	Titanium dioxide; Iron oxide	13463-67-7; 1309-37-1
17025068	dark brown B	PR 101; PBk 11	Iron oxide; Iron oxide black	1309-37-1; 1317-61-9
17028068	olive ochre light B	PY 42; PG 17; PBr 24; PBk 11	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 1308-38-9; 68186-90-3; 1317-61-9

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17028069	olive ochre light D	PY 42; PG 17; PBr 24; PBk 11	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 1308-38-9; 68186-90-3; 1317-61-9
17028073	olive ochre light H	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17028077	olive ochre light M	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17028079	olive ochre light O	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17029068	olive ochre deep B	PY 42; PG 17; PBr 24; PBk 11	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 1308-38-9; 68186-90-3; 1317-61-9
17029069	olive ochre deep D	PY 42; PG 17; PBr 24; PBk 11	Hydrated iron oxide; Hematite (Cr); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 1308-38-9; 68186-90-3; 1317-61-9
17029073	olive ochre deep H	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17029077	olive ochre deep M	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17029079	olive ochre deep O	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17030068	greenish umber B	PY 42; PBk 11	Hydrated iron oxide; Iron oxide black	20344-49-4; 1317-61-9
17030069	greenish umber D	PY 42; PY 119; PBk 11	Hydrated iron oxide; Spinel (Zn, Fe); Iron oxide black	20344-49-4; 68186-90-3; 1317-61-9
17030073	greenish umber H	PW 6; PY 42; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 1317-61-9
17030077	greenish umber M	PW 6; PY 42; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 1317-61-9
17030079	greenish umber O	PW 6; PY 42; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 1317-61-9
17032068	brown ochre B	PY 42; PY 119; PBr 24; PBk 11	Hydrated iron oxide; Spinel (Zn, Fe); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 68186-90-3; 68186-90-3; 1317-61-9
17032069	brown ochre D	PY 42; PY 119; PBr 24; PBk 11	Hydrated iron oxide; Spinel (Zn, Fe); Rutile (Ti, Cr, Sb); Iron oxide black	20344-49-4; 68186-90-3; 68186-90-3; 1317-61-9
17032073	brown ochre H	PW 6; PY 42; PY 119; PBr 24; PBk 11	Titanium dioxide; Hydrated iron oxide; Spinel (Zn, Fe); Rutile (Ti, Cr, Sb); Iron oxide black	13463-67-7; 20344-49-4; 68186-90-3; 68186-90-3; 1317-61-9
17032077	brown ochre M	PW 6; PY 42; PBr 6; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 72669-22-8; 1317-61-9
17032079	brown ochre O	PW 6; PY 42; PBr 6	Titanium dioxide; Hydrated iron oxide; Iron oxide	13463-67-7; 20344-49-4; 72669-22-8
17033068	burnt green earth B	PY 119; PR 101; PBk 11	Spinel (Zn, Fe); Iron oxide; Iron oxide black	68186-90-3; 1309-37-1; 1317-61-9
17033069	burnt green earth D	PY 119; PR 101	Spinel (Zn, Fe); Iron oxide	68186-90-3; 1309-37-1
17033073	burnt green earth H	PW 6; PY 119; PR 101	Titanium dioxide; Spinel (Zn, Fe); Iron oxide	13463-67-7; 68186-90-3; 1309-37-1
17033077	burnt green earth M	PW 6; PY 42; PR 101; PBr 6	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1; 72669-22-8
17033079	burnt green earth O	PW 6; PY 42; PR 101; PBr 6	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide	13463-67-7; 20344-49-4; 1309-37-1; 72669-22-8
17035068	burnt umber B	PBr 6; PBk 11	Iron oxide; Iron oxide black	72669-22-8; 1317-61-9
17035069	burnt umber D	PBr 6; PBk 11	Iron oxide; Iron oxide black	72669-22-8; 1317-61-9
17035073	burnt umber H	PW 6; PY 42; PBr 6; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 72669-22-8; 1317-61-9
17035077	burnt umber M	PW 6; PY 42; PBr 6; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 72669-22-8; 1317-61-9
17035079	burnt umber O	PW 6; PY 42; PBr 6; PBk 11	Titanium dioxide; Hydrated iron oxide; Iron oxide; Iron oxide black	13463-67-7; 20344-49-4; 72669-22-8; 1317-61-9
17036068	Vandyke brown B	PR 101; PBr 6; PBr 33; PBk 11	Iron oxide; Iron oxide; Spinel (Zn, Fe, Cr); Iron oxide black	1309-37-1; 72669-22-8; 68186-88-9; 1317-61-9
17036069	Vandyke brown D	PR 101; PBr 6; PBr 33; PBk 11	Iron oxide; Iron oxide; Spinel (Zn, Fe, Cr); Iron oxide black	1309-37-1; 72669-22-8; 68186-88-9; 1317-61-9
17036073	Vandyke brown H	PW 6; PR 101; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide; Iron oxide black	13463-67-7; 1309-37-1; 72669-22-8; 1317-61-9
17036077	Vandyke brown M	PW 6; PR 101; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide; Iron oxide black	13463-67-7; 1309-37-1; 72669-22-8; 1317-61-9
17036079	Vandyke brown O	PW 6; PR 101; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide; Iron oxide black	13463-67-7; 1309-37-1; 72669-22-8; 1317-61-9
17037068	sepia brown B	PY 42; PBr 6; PBr 33; PBk 11	Hydrated iron oxide; Iron oxide; Spinel (Zn, Fe, Cr); Iron oxide black	20344-49-4; 72669-22-8; 68186-88-9; 1317-61-9
17037069	sepia brown D	PBr 6; PBr 33; PBk 11	Iron oxide; Spinel (Zn, Fe, Cr); Iron oxide black	72669-22-8; 68186-88-9; 1317-61-9
17037073	sepia brown H	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17037077	sepia brown M	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17037079	sepia brown O	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17038068	walnut brown B	PBr 33; PBk 11	Spinel (Zn, Fe, Cr); Iron oxide black	68186-88-9; 1317-61-9
17038069	walnut brown D	PBr 33	Spinel (Zn, Fe, Cr)	68186-88-9
17038073	walnut brown H	PW 6; PBr 33	Titanium dioxide; Spinel (Zn, Fe, Cr)	13463-67-7; 68186-88-9
17038077	walnut brown M	PW 6; PBr 33	Titanium dioxide; Spinel (Zn, Fe, Cr)	13463-67-7; 68186-88-9
17038079	walnut brown O	PW 6; PBr 33	Titanium dioxide; Spinel (Zn, Fe, Cr)	13463-67-7; 68186-88-9
17040068	vermilion B	PR 3; PR 188; PR 242; PBk 11	Beta-Naphthol; PR 188; Disazocondensation; Iron oxide black	2425-85-6; PR 188; 118440-67-8; 1317-61-9
17040069	vermilion D	PR 3; PR 188; PR 242	Beta-Naphthol; PR 188; Disazocondensation	2425-85-6; PR 188; 118440-67-8

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17040073	vermilion H.....PW 6; PR 3; PR 188; PR 242	Titanium dioxide; Beta-Naphthol; PR 188; Disazocondensation	13463-67-7; 2425-85-6; PR 188; 118440-67-8
17040077	vermilion M.....PW 6; PR 3; PR 188; PR 242	Titanium dioxide; Beta-Naphthol; PR 188; Disazocondensation	13463-67-7; 2425-85-6; PR 188; 118440-67-8
17040079	vermilion O.....PW 6; PR 3; PR 188; PR 242	Titanium dioxide; Beta-Naphthol; PR 188; Disazocondensation	13463-67-7; 2425-85-6; PR 188; 118440-67-8
17041068	scarlet B.....PR 3; PR 168; PR 254; PBk 11	Beta-Naphthol; Anthanthrone; Diketo-pyrrolo-pyrrol; Iron oxide black.....	2425-85-6; 4378-61-4; 122390-98-1; 1317-61-9
17041069	scarlet D.....PR 3; PR 168; PR 254; PBk 11	Beta-Naphthol; Anthanthrone; Diketo-pyrrolo-pyrrol; Iron oxide black.....	2425-85-6; 4378-61-4; 122390-98-1; 1317-61-9
17041073	scarlet H.....PW 6; PR 3; PR 168; PR 254	Titanium dioxide; Beta-Naphthol; Anthanthrone; Diketo-pyrrolo-pyrrol.....	13463-67-7; 2425-85-6; 4378-61-4; 122390-98-1
17041077	scarlet M.....PW 6; PR 3; PR 168; PR 254	Titanium dioxide; Beta-Naphthol; Anthanthrone; Diketo-pyrrolo-pyrrol.....	13463-67-7; 2425-85-6; 4378-61-4; 122390-98-1
17041079	scarlet O.....PW 6; PR 3; PR 168; PR 254	Titanium dioxide; Beta-Naphthol; Anthanthrone; Diketo-pyrrolo-pyrrol.....	13463-67-7; 2425-85-6; 4378-61-4; 122390-98-1
17042068	permanent red 1 pale B.....PO 62; PR 242; PBk 11	Benzimidazolone; Disazocondensation; Iron oxide black.....	75601-68-2; 118440-67-8; 1317-61-9
17042069	permanent red 1 pale D.....PO 62; PR 242	Benzimidazolone; Disazocondensation.....	75601-68-2; 118440-67-8
17042073	permanent red 1 pale H.....PW 6; PO 43; PR 168	Titanium dioxide; Perinone; Anthanthrone	13463-67-7; 4424-06-0; 4378-61-4
17042077	permanent red 1 pale M.....PW 6; PO 43; PR 168	Titanium dioxide; Perinone; Anthanthrone	13463-67-7; 4424-06-0; 4378-61-4
17042079	permanent red 1 pale O.....PW 6; PO 43; PR 168	Titanium dioxide; Perinone; Anthanthrone	13463-67-7; 4424-06-0; 4378-61-4
17043068	bordeaux B.....PR 3; PR 101; PR 254; PV 19; PBK 11	Beta-Naphthol; Iron oxide; Diketo-pyrrolo-pyrrol; Quinacridone;.....	2425-85-6; 1309-37-1; 122390-98-1; 1047-16-1; 1317-61-9
17043069	bordeaux D.....PR 3; PR 101; PR 254; PV 19	Beta-Naphthol; Iron oxide; Diketo-pyrrolo-pyrrol; Quinacridone	2425-85-6; 1309-37-1; 122390-98-1; 1047-16-1
17043073	bordeaux H.....PW 6; PR 3; PR 101; PR 254; PV 19	Titanium dioxide; Beta-Naphthol; Iron oxide; Diketo-pyrrolo-pyrrol;.....	13463-67-7; 2425-85-6; 1309-37-1; 122390-98-1; Quinacridone
17043077	bordeaux M.....PW 6; PR 3; PR 101; PR 254; PV 19	Titanium dioxide; Beta-Naphthol; Iron oxide; Diketo-pyrrolo-pyrrol;.....	13463-67-7; 2425-85-6; 1309-37-1; 122390-98-1; Quinacridone
17043079	bordeaux O.....PW 6; PR 3; PR 101; PR 254; PV 19	Titanium dioxide; Beta-Naphthol; Iron oxide; Diketo-pyrrolo-pyrrol;.....	13463-67-7; 2425-85-6; 1309-37-1; 122390-98-1; Quinacridone
17044068	permanent red 3 deep B....PR 3; PR 112; PR 178; PR 242; PBk 11	Beta-Naphthol; Naphthol AS; Perylen; Disazocondensation;.....	2425-85-6; 6535-46-2; 3049-71-6; 118440-67-8; Iron oxide black.....
17044069	permanent red 3 deep D....PR 3; PR 112; PR 178; PR 242; PBk 11	Beta-Naphthol; Naphthol AS; Perylen; Disazocondensation;.....	2425-85-6; 6535-46-2; 3049-71-6; 118440-67-8; Iron oxide black.....
17044073	permanent red 3 deep H.....PW 6; PO 43; PR 112	Titanium dioxide; Perinone; Naphthol AS	13463-67-7; 4424-06-0; 6535-46-2
17044077	permanent red 3 deep M.....PW 6; PO 43; PR 112	Titanium dioxide; Perinone; Naphthol AS	13463-67-7; 4424-06-0; 6535-46-2
17044079	permanent red 3 deep O.....PW 6; PO 43; PR 112	Titanium dioxide; Perinone; Naphthol AS	13463-67-7; 4424-06-0; 6535-46-2
17045068	madder lake B.....PR 3; PR 112; PR 146; PR 187; PR 202; PBk 11	Beta-Naphthol; Naphthol AS; Naphthol AS; Naphthol AS;.....	2425-85-6; 6535-46-2; 5280-68-2; 59487-23-9; Quinacridone; Iron oxide black.....
17045069	madder lake D.....PR 3; PR 112; PR 146; PR 187; PR 202	Beta-Naphthol; Naphthol AS; Naphthol AS; Naphthol AS;.....	2425-85-6; 6535-46-2; 5280-68-2; 59487-23-9; Quinacridone
17045073	madder lake H.....PR 112; PV 19; PB 29	Naphthol AS; Quinacridone; Sodium aluminium silicate.....	6535-46-2; 1047-16-1; 57455-37-5
17045077	madder lake M.....PW 6; PR 112; PV 19; PB 29	Titanium dioxide; Naphthol AS; Quinacridone; Sodium aluminium silicate.....	13463-67-7; 6535-46-2; 1047-16-1; 57455-37-5
17045079	madder lake O.....PW 6; PR 112; PV 19; PB 29	Titanium dioxide; Naphthol AS; Quinacridone; Sodium aluminium silicate.....	13463-67-7; 6535-46-2; 1047-16-1; 57455-37-5
17046068	carmine red B.....PR 3; PR 146; PR 178; PR 242; PBk 11	Beta-Naphthol; Naphthol AS; Perylen; Disazocondensation;.....	2425-85-6; 5280-68-2; 3049-71-6; 118440-67-8; Iron oxide black.....
17046069	carmine red D.....PR 3; PR 146; PR 178; PR 242	Beta-Naphthol; Naphthol AS; Perylen; Disazocondensation	2425-85-6; 5280-68-2; 3049-71-6; 118440-67-8
17046073	carmine red H.....PR 112; PV 19	Naphthol AS; Quinacridone	6535-46-2; 1047-16-1
17046077	carmine red M.....PW 6; PR 112; PV 19	Titanium dioxide; Naphthol AS; Quinacridone	13463-67-7; 6535-46-2; 1047-16-1
17046079	carmine red O.....PW 6; PR 112; PV 19	Titanium dioxide; Naphthol AS; Quinacridone	13463-67-7; 6535-46-2; 1047-16-1
17047068	rose madder B.....PR 122; PR 146; PV 19; PBk 11	Quinacridone; Naphthol AS; Quinacridone; Iron oxide black	980-26-7; 5280-68-2; 1047-16-1; 1317-61-9
17047069	rose madder D.....PR 122; PR 146; PV 19	Quinacridone; Naphthol AS; Quinacridone	980-26-7; 5280-68-2; 1047-16-1
17047073	rose madder H.....PW 6; PV 19	Titanium dioxide; Quinacridone	13463-67-7; 1047-16-1
17047077	rose madder M.....PW 6; PV 19	Titanium dioxide; Quinacridone	13463-67-7; 1047-16-1
17047079	rose madder O.....PW 6; PV 19	Titanium dioxide; Quinacridone	13463-67-7; 1047-16-1

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17048068	quinacridone violet B	PR 3; PR 122; PV 19; PBk 11	Beta-Naphthol; Quinacridone; Quinacridone; Iron oxide black	2425-85-6; 980-26-7; 1047-16-1; 1317-61-9
17048069	quinacridone violet D	PR 3; PR 122; PV 19; PBk 11	Beta-Naphthol; Quinacridone; Quinacridone; Iron oxide black	2425-85-6; 980-26-7; 1047-16-1; 1317-61-9
17048073	quinacridone violet H	PW 6; PR 3; PR 122; PB 29	Titanium dioxide; Beta-Naphthol; Quinacridone; Sodium aluminium silicate	13463-67-7; 2425-85-6; 980-26-7; 57455-37-5
17048077	quinacridone violet M	PW 6; PR 3; PR 122; PB 29	Titanium dioxide; Beta-Naphthol; Quinacridone; Sodium aluminium silicate	13463-67-7; 2425-85-6; 980-26-7; 57455-37-5
17048079	quinacridone violet O	PW 6; PR 3; PR 122; PB 29	Titanium dioxide; Beta-Naphthol; Quinacridone; Sodium aluminium silicate	13463-67-7; 2425-85-6; 980-26-7; 57455-37-5
17049068	purple 1 B	PR 3; PV 19; PV 23; PBk 11	Beta-Naphthol; Quinacridone; Dioxazine; Iron oxide black	2425-85-6; 1047-16-1; 6358-30-1; 1317-61-9
17049069	purple 1 D	PR 3; PV 19; PV 23	Beta-Naphthol; Quinacridone; Dioxazine	2425-85-6; 1047-16-1; 6358-30-1
17049073	purple 1 H	PW 6; PR 146; PV 19; PB 29	Titanium dioxide; Naphthol AS; Quinacridone; Sodium aluminium silicate	13463-67-7; 5280-68-2; 1047-16-1; 57455-37-5
17049077	purple 1 M	PW 6; PR 146; PV 19; PB 29	Titanium dioxide; Naphthol AS; Quinacridone; Sodium aluminium silicate	13463-67-7; 5280-68-2; 1047-16-1; 57455-37-5
17049079	purple 1 O	PW 6; PR 146; PV 19; PB 29	Titanium dioxide; Naphthol AS; Quinacridone; Sodium aluminium silicate	13463-67-7; 5280-68-2; 1047-16-1; 57455-37-5
17050068	purple 2 B	PR 122; PV 15; PV 23; PBk 11	Quinacridone; Sodium aluminium silicate; Dioxazine; Iron oxide black	980-26-7; 12769-96-9; 6358-30-1; 1317-61-9
17050069	purple 2 D	PR 122; PV 15; PV 23	Quinacridone; Sodium aluminium silicate; Dioxazine	980-26-7; 12769-96-9; 6358-30-1
17050073	purple 2 H	PR 146; PV 15	Naphthol AS; Sodium aluminium silicate	5280-68-2; 12769-96-9
17050077	purple 2 M	PW 6; PR 146; PV 15	Titanium dioxide; Naphthol AS; Sodium aluminium silicate	13463-67-7; 5280-68-2; 12769-96-9
17050079	purple 2 O	PW 6; PR 146; PV 15	Titanium dioxide; Naphthol AS; Sodium aluminium silicate	13463-67-7; 5280-68-2; 12769-96-9
17052068	manganese violet B	PV 15; PV 16; PV 23; PBk 11	Sodium aluminium silicate; Manganese-ammoniumphosphate; Dioxazine; Iron oxide black	12769-96-9; 10101-66-3; 6358-30-1; 1317-61-9
17052069	manganese violet D	PV 15; PV 16; PV 23	Sodium aluminium silicate; Manganese-ammoniumphosphate; Dioxazine	12769-96-9; 10101-66-3; 6358-30-1
17052073	manganese violet H	PW 6; PV 15; PV 16; PV 23	Titanium dioxide; Sodium aluminium silicate; Manganese-ammoniumphosphate; Dioxazine	13463-67-7; 12769-96-9; 10101-66-3; 6358-30-1
17052077	manganese violet M	PW 6; PV 15; PV 16; PV 23	Titanium dioxide; Sodium aluminium silicate; Manganese-ammoniumphosphate; Dioxazine	13463-67-7; 12769-96-9; 10101-66-3; 6358-30-1
17052079	manganese violet O	PW 6; PV 15; PV 16; PV 23	Titanium dioxide; Sodium aluminium silicate; Manganese-ammoniumphosphate; Dioxazine	13463-67-7; 12769-96-9; 10101-66-3; 6358-30-1
17054069	red violet D	PV 15; PV 19	Sodium aluminium silicate; Quinacridone	12769-96-9; 1047-16-1
17055069	reddish violet deep D	PR 202; PV 15; PV 23	Quinacridone; Sodium aluminium silicate; Dioxazine	1047-16-1; 12769-96-9; 6358-30-1
17056068	reddish violet B	PV 15; PV 23; PBk 11	Sodium aluminium silicate; Dioxazine; Iron oxide black	12769-96-9; 6358-30-1; 1317-61-9
17056069	reddish violet D	PV 15; PV 23	Sodium aluminium silicate; Dioxazine	12769-96-9; 6358-30-1
17056073	reddish violet H	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17056077	reddish violet M	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17056079	reddish violet O	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17057068	bluish violet B	PV 15; PV 23; PB 15:1; PBk 11	Sodium aluminium silicate; Dioxazine; Phthalocyanine (Cu); Iron oxide black	12769-96-9; 6358-30-1; 147-14-8; 1317-61-9
17057069	bluish violet D	PV 15; PV 23; PB 15:1	Sodium aluminium silicate; Dioxazine; Phthalocyanine (Cu)	12769-96-9; 6358-30-1; 147-14-8
17057073	bluish violet H	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17057077	bluish violet M	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17057079	bluish violet O	PW 6; PV 15	Titanium dioxide; Sodium aluminium silicate	13463-67-7; 12769-96-9
17059068	deep violet B	PV 19; PV 23; PB 15; PB 29; PBk 11	Quinacridone; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black	1047-16-1; 6358-30-1; 147-14-8; 57455-37-5; 1317-61-9
17059069	deep violet D	PV 19; PV 23; PB 15; PB 29	Quinacridone; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate	1047-16-1; 6358-30-1; 147-14-8; 57455-37-5
17059073	deep violet H	PW 6; PR 146; PV 15; PB 29	Titanium dioxide; Naphthol AS; Sodium aluminium silicate; Sodium aluminium silicate	13463-67-7; 5280-68-2; 12769-96-9; 57455-37-5
17059077	deep violet M	PV 19	Quinacridone	1047-16-1
17059079	deep violet O	PW 6; PV 19	Titanium dioxide; Quinacridone	13463-67-7; 1047-16-1
17060069	ultramarine blue deep D	PB 15:6; PB 29; PV 23	Phthalocyanine (Cu); Sodium aluminium silicate; Dioxazine	147-14-8; 57455-37-5; 6358-30-1
17061068	phthalo blue deep B	PB 15; PB 15 :1; PB 29; PBk 11	Phthalocyanine (Cu); Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black	147-14-8; 147-14-8; 57455-37-5; 1317-61-9
17061069	phthalo blue deep D	PB 15 :1; PB 29; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black	147-14-8; 57455-37-5; 1317-61-9

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17061073	phthalo blue deep H.....PW 6; PV 23; PB 15 :1; PB 29; PBk 11	Titanium dioxide; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate ;13463-67-7; 6358-30-1; 147-14-8; 57455-37-5; Iron oxide black..... 1317-61-9
17061077	phthalo blue deep M.....PW 6; PV 23; PB 15 :1; PB 29; PBk 11	Titanium dioxide; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate;13463-67-7; 6358-30-1; 147-14-8; 57455-37-5; Iron oxide black..... 1317-61-9
17061079	phthalo blue deep OPW 6; PV 23; PB 15 :1; PB 29; PBk 11	Titanium dioxide; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate;13463-67-7; 6358-30-1; 147-14-8; 57455-37-5; Iron oxide black..... 1317-61-9
17062068	ultramarine light B..... PV 23; PB 15:1; PB 29; PBk 11	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black. 6358-30-1; 147-14-8; 57455-37-5; 1317-61-9
17062069	ultramarine light DPV 23; PB 15:1; PB 29	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate 6358-30-1; 147-14-8; 57455-37-5
17062073	ultramarine light HPW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17062077	ultramarine light M.....PW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17062079	ultramarine light OPW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17063068	ultramarine deep B PV 23; PB 15:1; PB 29; PBk 11	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black. 6358-30-1; 147-14-8; 57455-37-5; 1317-61-9
17063069	ultramarine deep DPV 23; PB 15:1; PB 29	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate 6358-30-1; 147-14-8; 57455-37-5
17063073	ultramarine deep HPW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17063077	ultramarine deep MPW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17063079	ultramarine deep OPW 6; PB 29	Titanium dioxide; Sodium aluminium silicate..... 13463-67-7; 57455-37-5
17064068	cobalt blue tone B.....PB 15:1; PB 29; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide black 147-14-8; 57455-37-5; 1317-61-9
17064069	cobalt blue tone D.....PB 15:1; PB 29	Phthalocyanine (Cu); Sodium aluminium silicate 147-14-8; 57455-37-5
17064073	cobalt blue tone H.....PW 6; PB 15:1; PB 29	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate 13463-67-7; 147-14-8; 57455-37-5
17064077	cobalt blue tone M.....PW 6; PB 15:1; PB 29	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate 13463-67-7; 147-14-8; 57455-37-5
17064079	cobalt blue tone OPW 6; PB 15:1; PB 29	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate 13463-67-7; 147-14-8; 57455-37-5
17065068	greenish blue BPB 15:1; PG 7; PBk 11	Phthalocyanine (Cu); Phthalocyanine (Cu, Cl); Iron oxide black 147-14-8; 1328-53-6; 1317-61-9
17065069	greenish blue D.....PB 15:1; PG 7	Phthalocyanine (Cu); Phthalocyanine (Cu, Cl) 147-14-8; 1328-53-6
17065073	greenish blue H.....PW 6; PB 15:1; PG 7	Titanium dioxide; Phthalocyanine (Cu); Phthalocyanine (Cu, Cl) 13463-67-7; 147-14-8; 1328-53-6
17065077	greenish blue M.....PW 6; PB 15:1; PG 7	Titanium dioxide; Phthalocyanine (Cu); Phthalocyanine (Cu, Cl) 13463-67-7; 147-14-8; 1328-53-6
17065079	greenish blue OPW 6; PB 15:1; PG 7	Titanium dioxide; Phthalocyanine (Cu); Phthalocyanine (Cu, Cl) 13463-67-7; 147-14-8; 1328-53-6
17066068	Prussian blue BPB 27; PB 29; PB 66; PBk 11	Iron-cyan-complex; Sodium aluminium silicate; Indigo, synthetic; 14038-43-8; 25869-98-1; 57455-37-5; 482-89-3; Iron oxide black..... 1317-61-9
17066069	Prussian blue D.....PB 27; PB 29; PB 66	Iron-cyan-complex; Sodium aluminium silicate; Indigo, synthetic 14038-43-8; 25869-98-1; 57455-37-5; 482-89-3
17066073	Prussian blue H.....PV 23; PB 15 :1; PB 29; PG 7; PG 17	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; 6358-30-1; 147-14-8; 57455-37-5; Phthalocyanine (Cu, Cl); Hematite (Cr)..... 1328-53-6; 1308-38-9
17066077	Prussian blue M.....PW 6; PB 29; PB 36	Titanium dioxide; Sodium aluminium silicate; Spinel (Co, Al, Cr)..... 13463-67-7; 57455-37-5; 68187-11-1
17066079	Prussian blue O.....PW 6; PB 29; PB 36	Titanium dioxide; Sodium aluminium silicate; Spinel (Co, Al, Cr)..... 13463-67-7; 57455-37-5; 68187-11-1
17067068	indigo tone B.....PW 6; PB 15:1; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Iron oxide black 13463-67-7; 147-14-8; 1317-61-9
17067069	indigo tone DPB 15:1; PB 29; PR 101; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide; Iron oxide black. 147-14-8; 57455-37-5; 1309-37-1; 1317-61-9
17067073	indigo tone HPW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black..... 1317-61-9
17067077	indigo tone M.....PW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black..... 1317-61-9
17067079	indigo tone OPW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black..... 1317-61-9
17068068	bluish green B.....PB 15; PB 36; PG 7; PBk 11	Phthalocyanine (Cu); Spinel (Co, Al, Cr); Phthalocyanine (Cu, Cl); 147-14-8; 68187-11-1; 1328-53-6; Iron oxide black..... 1317-61-9
17068069	bluish green D.....PB 15; PB 36; PG 7; PBk 11	Phthalocyanine (Cu); Spinel (Co, Al, Cr); Phthalocyanine (Cu, Cl); 147-14-8; 68187-11-1; 1328-53-6; Iron oxide black..... 1317-61-9
17068073	bluish green H.....PW 6; PB 15; PG 7; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Phthalocyanine (Cu, Cl); 13463-67-7; 147-14-8; 1328-53-6; Iron oxide black..... 1317-61-9

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17068077	bluish green M.....	PW 6; PB 15; PB 36; PG 7	Titanium dioxide; Phthalocyanine (Cu); Spinel (Co, Al, Cr);.....	13463-67-7; 147-14-8; 68187-11-1; Phthalocyanine (Cu, Cl).....	1328-53-6
17068079	bluish green O.....	PW 6; PB 15; PB 36; PG 7	Titanium dioxide; Phthalocyanine (Cu); Spinel (Co, Al, Cr);.....	13463-67-7; 147-14-8; 68187-11-1; Phthalocyanine (Cu, Cl).....	1328-53-6
17069068	bluish green deep B.....	PW 6; PB 15:1; PB 29; PR 101	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide	13463-67-7; 147-14-8; 57455-37-5; 1309-37-1	
17069069	bluish green deep D.....	PB 15:1; PB 29; PR 101; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide; Iron oxide black.	147-14-8; 57455-37-5; 1309-37-1; 1317-61-9	
17069073	bluish green deep H.....	PW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;	13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black.....	1317-61-9
17069077	bluish green deep M.....	PW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;	13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black.....	1317-61-9
17069079	bluish green deep O.....	PW 6; PB 15:1; PB 29; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Iron oxide;	13463-67-7; 147-14-8; 57455-37-5; 1309-37-1; Iron oxide black.....	1317-61-9
17600068	Delft blue B.....	PV 23; PB 15:1; PB 29; PB 60; PBk 11	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Indanthrone;	6358-30-1; 147-14-8; 57455-37-5; 81-77-6; Iron oxide black.....	1317-61-9
17600069	Delft blue D.....	PV 23; PB 15:1; PB 29; PB 60	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Indanthrone.....	6358-30-1; 147-14-8; 57455-37-5; 81-77-6	
17600073	Delft blue H.....	PV 23; PB 15:1; PB 29; PB 60	Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate; Indanthrone.....	6358-30-1; 147-14-8; 57455-37-5; 81-77-6	
17600077	Delft blue M.....	PW 6; PV 23; PB 15:1; PB 29; PB 60	Titanium dioxide; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate;	13463-67-7; 6358-30-1; 147-14-8; 57455-37-5; Indanthrone.....	81-77-6
17600079	Delft blue O.....	PW 6; PV 23; PB 15:1; PB 29; PB 60	Titanium dioxide; Dioxazine; Phthalocyanine (Cu); Sodium aluminium silicate;	13463-67-7; 6358-30-1; 147-14-8; 57455-37-5; Indanthrone.....	81-77-6
17650068	cobalt turquoise B.....	PG 50; PB 16; PBk 11	Spinel (Co, Ni, Zn, Ti); Phthalocyanine; Iron oxide black.....	68186-85-6; 574-93-6; 1317-61-9	
17650069	cobalt turquoise D.....	PG 50; PB 16	Spinel (Co, Ni, Zn, Ti); Phthalocyanine.....	68186-85-6; 574-93-6	
17650073	cobalt turquoise H.....	PW 6; PG 50; PB 16	Titanium dioxide; Spinel (Co, Ni, Zn, Ti); Phthalocyanine.....	13463-67-7; 68186-85-6; 574-93-6	
17650077	cobalt turquoise M.....	PW 6; PG 50; PB 16	Titanium dioxide; Spinel (Co, Ni, Zn, Ti); Phthalocyanine.....	13463-67-7; 68186-85-6; 574-93-6	
17650079	cobalt turquoise O.....	PW 6; PG 50; PB 16	Titanium dioxide; Spinel (Co, Ni, Zn, Ti); Phthalocyanine.....	13463-67-7; 68186-85-6; 574-93-6	
17690068	cerulean blue B.....	PB 15:1; PB 29; PG 7; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl);.....	147-14-8; 57455-37-5; 1328-53-6; Iron oxide black.....	1317-61-9
17690069	cerulean blue D.....	PB 15:1; PB 29; PG 7	Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl).....	147-14-8; 57455-37-5; 1328-53-6	
17690073	cerulean blue H.....	PW 6; PB 15:1; PB 29; PG 7; PR 101	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate;.....	13463-67-7; 147-14-8; 57455-37-5; Phthalocyanine (Cu, Cl); Iron oxide.....	1328-53-6; 1309-37-1
17690077	cerulean blue M.....	PW 6; PB 15:1; PB 29; PG 7; PR 101	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate;.....	13463-67-7; 147-14-8; 57455-37-5; Phthalocyanine (Cu, Cl); Iron oxide.....	1328-53-6; 1309-37-1
17690079	cerulean blue O.....	PW 6; PB 15:1; PB 29; PG 7; PR 101	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate;.....	13463-67-7; 147-14-8; 57455-37-5; Phthalocyanine (Cu, Cl); Iron oxide.....	1328-53-6; 1309-37-1
17070068	leaf green deep B.....	PY 74; PG 7; PBk 11	Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black.....	6358-31-2; 1328-53-6; 1317-61-9	
17070069	leaf green deep D.....	PY 74; PG 7; PBk 11	Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black.....	6358-31-2; 1328-53-6; 1317-61-9	
17070073	leaf green deep H.....	PW 6; PY 74; PG 7; PBk 11	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black.....	13463-67-7; 6358-31-2; 1328-53-6; 1317-61-9	
17070077	leaf green deep M.....	PW 6; PY 74; PG 7; PBk 11	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black.....	13463-67-7; 6358-31-2; 1328-53-6; 1317-61-9	
17070079	leaf green deep O.....	PW 6; PY 74; PG 7; PBk 11	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black.....	13463-67-7; 6358-31-2; 1328-53-6; 1317-61-9	
17071068	light green B.....	PG 7; PBk 11	Phthalocyanine (Cu, Cl); Iron oxide black.....	1328-53-6; 1317-61-9	
17071069	light green D.....	PG 7	Phthalocyanine (Cu, Cl).....	1328-53-6	
17071073	light green H.....	PW 6; PG 7	Titanium dioxide; Phthalocyanine (Cu, Cl).....	13463-67-7; 1328-53-6	
17071077	light green M.....	PW 6; PG 7	Titanium dioxide; Phthalocyanine (Cu, Cl).....	13463-67-7; 1328-53-6	
17071079	light green O.....	PW 6; PG 7	Titanium dioxide; Phthalocyanine (Cu, Cl).....	13463-67-7; 1328-53-6	
17072068	leaf green 1 B.....	PY 53; PG 7; PG 17; PBk 24; PBk 11	Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Hematite (Cr); Rutile (Ti, Cr, Sb); ..	8007-18-9; 1328-53-6; 1308-38-9; 68186-90-3; Iron oxide black.....	1317-61-9
17072069	leaf green 1 D.....	PY 53; PG 7; PG 17; PBk 24	Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Hematite (Cr); Rutile (Ti, Cr, Sb) ...	8007-18-9; 1328-53-6; 1308-38-9; 68186-90-3	

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17072073	leaf green 1 H	PW 6; PY 3; PY 138; PG 7; PG 17	Titanium dioxide; Monoazo; Chinophthalone; Phthalocyanine (Cu, Cl); Hematite (Cr)	13463-67-7; 6486-23-3; 56731-19-2; 1328-53-6; 1308-38-9
17072073	leaf green 1 M	PW 6; PY 3; PY 138; PG 7	Titanium dioxide; Monoazo; Chinophthalone; Phthalocyanine (Cu, Cl)	13463-67-7; 6486-23-3; 56731-19-2; 1328-53-6
17072073	leaf green 1 O	PW 6; PY 3; PY 138; PG 7	Titanium dioxide; Monoazo; Chinophthalone; Phthalocyanine (Cu, Cl)	13463-67-7; 6486-23-3; 56731-19-2; 1328-53-6
17073068	leaf green 2 B	PG 17; PB 15:1; PBk 11	Hematite (Cr); Phthalocyanine (Cu); Iron oxide black	1308-38-9; 147-14-8; 1317-61-9
17073069	leaf green 2 D	PG 17; PB 15:1	Hematite (Cr); Phthalocyanine (Cu)	1308-38-9; 147-14-8
17073073	leaf green 2 H	PW 6; PG 17; PB 15:1	Titanium dioxide; Hematite (Cr); Phthalocyanine (Cu)	13463-67-7; 1308-38-9; 147-14-8
17073077	leaf green 2 M	PW 6; PG 7; PG 17	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr)	13463-67-7; 1328-53-6; 1308-38-9
17073079	leaf green 2 O	PW 6; PG 7; PG 17	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr)	13463-67-7; 1328-53-6; 1308-38-9
17074068	phthalo green deep B	PG 7; PBk 11	Phthalocyanine (Cu, Cl); Iron oxide black	1328-53-6; 1317-61-9
17074069	phthalo green deep D	PG 7; PBk 11	Phthalocyanine (Cu, Cl); Iron oxide black	1328-53-6; 1317-61-9
17074073	phthalo green deep H	PW 6; PG 7; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Iron oxide black	13463-67-7; 1328-53-6; 1317-61-9
17074077	phthalo green deep M	PW 6; PG 7; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Iron oxide black	13463-67-7; 1328-53-6; 1317-61-9
17074079	phthalo green deep O	PW 6; PG 7; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Iron oxide black	13463-67-7; 1328-53-6; 1317-61-9
17075068	mossy green 1 B	PY 53; PG 7; PG 17; PBr 24; PBk 11	Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Hematite (Cr); Rutile (Ti, Cr, Sb); Iron oxide black	8007-18-9; 1328-53-6; 1308-38-9; 68186-90-3; 1317-61-9
17075069	mossy green 1 D	PY 53; PG 7; PG 17; PBr 24	Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Hematite (Cr); Rutile (Ti, Cr, Sb)	8007-18-9; 1328-53-6; 1308-38-9; 68186-90-3
17075073	mossy green 1 H	PY 53; PG 7; PG 17; PBr 24	Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Hematite (Cr); Rutile (Ti, Cr, Sb)	8007-18-9; 1328-53-6; 1308-38-9; 68186-90-3
17075077	mossy green 1 M	PW 6; PY 53; PG 7; PBr 24	Titanium dioxide; Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Rutile (Ti, Cr, Sb)	13463-67-7; 8007-18-9; 1328-53-6; 68186-90-3
17075079	mossy green 1 O	PW 6; PY 53; PG 7; PBr 24	Titanium dioxide; Rutile (Ti, Ni, Sb); Phthalocyanine (Cu, Cl); Rutile (Ti, Cr, Sb)	13463-67-7; 8007-18-9; 1328-53-6; 68186-90-3
17076068	mossy green 2 B	PY 74; PG 7; PBk 11	Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black	6358-31-2; 1328-53-6; 1317-61-9
17076069	mossy green 2 D	PY 74; PG 7	Monoazo; Phthalocyanine (Cu, Cl)	6358-31-2; 1328-53-6
17076073	mossy green 2 H	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17076077	mossy green 2 M	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17076079	mossy green 2 O	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17077068	may green B	PY 74; PG 7; PBk 11	Monoazo; Phthalocyanine (Cu, Cl); Iron oxide black	6358-31-2; 1328-53-6; 1317-61-9
17077069	may green D	PY 74; PG 7	Monoazo; Phthalocyanine (Cu, Cl)	6358-31-2; 1328-53-6
17077073	may green H	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17077077	may green M	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17077079	may green O	PW 6; PY 74; PG 7	Titanium dioxide; Monoazo; Phthalocyanine (Cu, Cl)	13463-67-7; 6358-31-2; 1328-53-6
17080068	cold green 1 B	PG 17; PG 19; PB 29; PBk 11	Hematite (Cr); Spinel (Co, Zn); Sodium aluminium silicate; Iron oxide black	1308-38-9; 8011-87-8; 57455-37-5; 1317-61-9
17080069	cold green 1 D	PG 17; PG 19; PB 29	Hematite (Cr); Spinel (Co, Zn); Sodium aluminium silicate	1308-38-9; 8011-87-8; 57455-37-5
17080073	cold green 1 H	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17080077	cold green 1 M	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17080079	cold green 1 O	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17081068	cold green deep B	PW 6; PB 15:1; PG 7; PG 26; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Phthalocyanine (Cu, Cl); Spinel (Co,Cr); Iron oxide black	13463-67-7; 147-14-8; 1328-53-6; 68187-49-5; 1317-61-9
17081069	cold green deep D	PB 15:1; PB 29; PG 7; PG 26; PR 101; PBk 11	Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl); Spinel (Co,Cr); Iron oxide; Iron oxide black	147-14-8; 57455-37-5; 1328-53-6; 68187-49-5; 1309-37-1; 1317-61-9
17081073	cold green deep H	PW 6; PB 15:1; PB 29; PG 7; PG 26; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl); Spinel (Co,Cr); Iron oxide; Iron oxide black	13463-67-7; 147-14-8; 57455-37-5; 1328-53-6; 68187-49-5; 1309-37-1; 1317-61-9
17081077	cold green deep M	PW 6; PB 15:1; PB 29; PG 7; PG 26; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl); Spinel (Co,Cr); Iron oxide; Iron oxide black	13463-67-7; 147-14-8; 57455-37-5; 1328-53-6; 68187-49-5; 1309-37-1; 1317-61-9
17081079	cold green deep O	PW 6; PB 15:1; PB 29; PG 7; PG 26; PR 101; PBk 11	Titanium dioxide; Phthalocyanine (Cu); Sodium aluminium silicate; Phthalocyanine (Cu, Cl); Spinel (Co,Cr); Iron oxide; Iron oxide black	13463-67-7; 147-14-8; 57455-37-5; 1328-53-6; 68187-49-5; 1309-37-1; 1317-61-9
17082068	Verona green B	PB 29; PG 17; PBk 11	Sodium aluminium silicate; Hematite (Cr); Iron oxide black	57455-37-5; 1308-38-9; 1317-61-9
17082069	Verona green D	PB 29; PG 17; PBk 11	Sodium aluminium silicate; Hematite (Cr); Iron oxide black	57455-37-5; 1308-38-9; 1317-61-9

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17082073	Verona green H.....	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17082077	Verona green M.....	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17082079	Verona green O.....	PW 6; PB 29; PG 17	Titanium dioxide; Sodium aluminium silicate; Hematite (Cr)	13463-67-7; 57455-37-5; 1308-38-9
17083068	Bohemian green B.....	PY 42; PG 17; PBk 11	Hydrated iron oxide; Hematite (Cr); Iron oxide black	20344-49-4; 1308-38-9; 1317-61-9
17083069	Bohemian green D.....	PY 42; PG 17; PBk 11	Hydrated iron oxide; Hematite (Cr); Iron oxide black	20344-49-4; 1308-38-9; 1317-61-9
17083073	Bohemian green H.....	PW 6; PY 42; PG 17; PBk 11	Titanium dioxide; Hydrated iron oxide; Hematite (Cr); Iron oxide black	13463-67-7; 20344-49-4; 1308-38-9; 1317-61-9
17083077	Bohemian green M.....	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17083079	Bohemian green O.....	PW 6; PY 42; PG 17; PBk 11	Titanium dioxide; Hydrated iron oxide; Hematite (Cr); Iron oxide black	13463-67-7; 20344-49-4; 1308-38-9; 1317-61-9
17084068	chromium oxide green B	PG 17; PBk 11	Hematite (Cr); Iron oxide black	1308-38-9; 1317-61-9
17084068	chromium oxide green D	PG 17	Hematite (Cr)	1308-38-9
17084068	chromium oxide green H	PW 6; PG 17	Titanium dioxide; Hematite (Cr)	13463-67-7; 1308-38-9
17084068	chromium oxide green M	PW 6; PG 17	Titanium dioxide; Hematite (Cr)	13463-67-7; 1308-38-9
17084068	chromium oxide green O	PW 6; PG 17	Titanium dioxide; Hematite (Cr)	13463-67-7; 1308-38-9
17085068	olive green 1 B	PY 42; PG 17; PBk 11	Hydrated iron oxide; Hematite (Cr); Iron oxide black	20344-49-4; 1308-38-9; 1317-61-9
17085069	olive green 1 D.....	PY 42; PG 17; PBk 11	Hydrated iron oxide; Hematite (Cr); Iron oxide black	20344-49-4; 1308-38-9; 1317-61-9
17085073	olive green 1 H.....	PW 6; PY 42; PG 17; PBk 11	Titanium dioxide; Hydrated iron oxide; Hematite (Cr); Iron oxide black	13463-67-7; 20344-49-4; 1308-38-9; 1317-61-9
17085077	olive green 1 M.....	PW 6; PY 42; PG 17; PBk 11	Titanium dioxide; Hydrated iron oxide; Hematite (Cr); Iron oxide black	13463-67-7; 20344-49-4; 1308-38-9; 1317-61-9
17085079	olive green 1 O	PW 6; PY 42; PG 17	Titanium dioxide; Hydrated iron oxide; Hematite (Cr)	13463-67-7; 20344-49-4; 1308-38-9
17086068	olive green 2 B	PY 42; PG 17; PBk 11	Hydrated iron oxide; Hematite (Cr); Iron oxide black	20344-49-4; 1308-38-9; 1317-61-9
17086069	olive green 2 D.....	PY 42; PY 53; PG 17; PBr 24	Hydrated iron oxide; Rutile (Ti, Ni, Sb); Hematite (Cr); Rutile (Ti, Cr, Sb).....	20344-49-4; 8007-18-9; 1308-38-9; 68186-90-3
17086073	olive green 2 H.....	PW 6; PY 42; PY 53; PG 17; PBr 24	Titanium dioxide; Hydrated iron oxide; Rutile (Ti, Ni, Sb); Hematite (Cr);	13463-67-7; 20344-49-4; 8007-18-9; 1308-38-9; Rutile (Ti, Cr, Sb).....
17086077	olive green 2 M.....	PW 6; PY 42; PY 53; PG 17; PBr 24	Titanium dioxide; Hydrated iron oxide; Rutile (Ti, Ni, Sb); Hematite (Cr);	13463-67-7; 20344-49-4; 8007-18-9; 1308-38-9; Rutile (Ti, Cr, Sb).....
17086079	olive green 2 O	PW 6; PY 42; PY 53; PG 17; PBr 24	Titanium dioxide; Hydrated iron oxide; Rutile (Ti, Ni, Sb); Hematite (Cr);	13463-67-7; 20344-49-4; 8007-18-9; 1308-38-9; Rutile (Ti, Cr, Sb).....
17087068	olive green deep B.....	PY 42; PO 62; PG 7; PG 36; PBk 11	Hydrated iron oxide; Benzimidazolone; Phthalocyanine (Cu, Cl);.....	20344-49-4; 75601-68-2; 1328-53-6; Phthalocyanine complex (Cu, Cl, Br); Iron oxide black.....
17090068	grey violet B.....	PY 42; PV 15; PB 29; PBk 11	Hydrated iron oxide; Sodium aluminium silicate; Sodium aluminium silicate;	20344-49-4; 12769-96-9; 57455-37-5; Iron oxide black.....
17090069	grey violet D.....	PW 6; PY 42; PV 15; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate;.....	13463-67-7; 20344-49-4; 12769-96-9; Sodium aluminium silicate; Iron oxide black
17090073	grey violet H.....	PW 6; PY 42; PV 15; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate;.....	13463-67-7; 20344-49-4; 12769-96-9; Sodium aluminium silicate; Iron oxide black
17090077	grey violet M.....	PW 6; PY 42; PV 15; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate;.....	13463-67-7; 20344-49-4; 12769-96-9; Sodium aluminium silicate; Iron oxide black
17090079	grey violet O	PW 6; PY 42; PV 15; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate;.....	13463-67-7; 20344-49-4; 12769-96-9; Sodium aluminium silicate; Iron oxide black
17091068	grey blue B.....	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black.....	13463-67-7; 57455-37-5; 1317-61-9
17091069	grey blue D	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black.....	13463-67-7; 57455-37-5; 1317-61-9
17091073	grey blue H	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black.....	13463-67-7; 57455-37-5; 1317-61-9
17091077	grey blue M.....	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black.....	13463-67-7; 57455-37-5; 1317-61-9
17091079	grey blue O	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black.....	13463-67-7; 57455-37-5; 1317-61-9
17092068	reddish grey B.....	PB 29; PV 15; PV 19; PBk 11	Sodium aluminium silicate; Sodium aluminium silicate; Quinacridone;	57455-37-5; 12769-96-9; 1047-16-1; Iron oxide black.....
17092069	reddish grey D	PB 29; PV 15; PV 19; PBk 11	Sodium aluminium silicate; Sodium aluminium silicate; Quinacridone;	57455-37-5; 12769-96-9; 1047-16-1; Iron oxide black.....

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17092073	reddish grey H	PW 6; PB 29; PV 15; PV 19; PBk 11	Titanium dioxide; Sodium aluminium silicate; Sodium aluminium silicate; Quinacridone; Iron oxide black	13463-67-7; 57455-37-5; 12769-96-9; 1047-16-1; 1317-61-9
17092077	reddish grey M	PW 6; PB 29; PV 15; PV 19; PBk 11	Titanium dioxide; Sodium aluminium silicate; Sodium aluminium silicate; Quinacridone; Iron oxide black	13463-67-7; 57455-37-5; 12769-96-9; 1047-16-1; 1317-61-9
17092079	reddish grey O	PW 6; PB 29; PV 15; PV 19; PBk 11	Titanium dioxide; Sodium aluminium silicate; Sodium aluminium silicate; Quinacridone; Iron oxide black	13463-67-7; 57455-37-5; 12769-96-9; 1047-16-1; 1317-61-9
17093068	greenish grey 1 B	PY 42; PB 29; PBk 11	Hydrated iron oxide; Sodium aluminium silicate; Iron oxide black	20344-49-4; 57455-37-5; 1317-61-9
17093069	greenish grey 1 D	PY 42; PB 29; PBk 11	Hydrated iron oxide; Sodium aluminium silicate; Iron oxide black	20344-49-4; 57455-37-5; 1317-61-9
17093073	greenish grey 1 H	PY 42; PB 29; PBk 11	Hydrated iron oxide; Sodium aluminium silicate; Iron oxide black	20344-49-4; 57455-37-5; 1317-61-9
17093077	greenish grey 1 M	PW 6; PY 42; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate; Iron oxide black	13463-67-7; 20344-49-4; 57455-37-5; 1317-61-9
17093079	greenish grey 1 O	PW 6; PY 42; PB 29; PBk 11	Titanium dioxide; Hydrated iron oxide; Sodium aluminium silicate; Iron oxide black	13463-67-7; 20344-49-4; 57455-37-5; 1317-61-9
17094068	greenish grey 2 B	PG 17; PB 29; PBk 11	Hematite (Cr); Sodium aluminium silicate; Iron oxide black	1308-38-9; 57455-37-5; 1317-61-9
17094069	greenish grey 2 D	PW 6; PG 7; PG 17; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr); Iron oxide black	13463-67-7; 1328-53-6; 1308-38-9; 1317-61-9
17094073	greenish grey 2 H	PW 6; PG 7; PG 17; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr); Iron oxide black	13463-67-7; 1328-53-6; 1308-38-9; 1317-61-9
17094077	greenish grey 2 M	PW 6; PG 7; PG 17; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr); Iron oxide black	13463-67-7; 1328-53-6; 1308-38-9; 1317-61-9
17094079	greenish grey 2 O	PW 6; PG 7; PG 17; PBk 11	Titanium dioxide; Phthalocyanine (Cu, Cl); Hematite (Cr); Iron oxide black	13463-67-7; 1328-53-6; 1308-38-9; 1317-61-9
17095068	cold grey B	PB 29; PBk 11	Sodium aluminium silicate; Iron oxide black	57455-37-5; 1317-61-9
17095069	cold grey D	PB 29; PBk 11	Sodium aluminium silicate; Iron oxide black	57455-37-5; 1317-61-9
17095073	cold grey H	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black	13463-67-7; 57455-37-5; 1317-61-9
17095077	cold grey M	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black	13463-67-7; 57455-37-5; 1317-61-9
17095079	cold grey O	PW 6; PB 29; PBk 11	Titanium dioxide; Sodium aluminium silicate; Iron oxide black	13463-67-7; 57455-37-5; 1317-61-9
17097069	serious black D	PG 7; PB 60; PBk 7; PBk 8	Phthalocyanine (Cu, Cl); Indanthrone; Lamp black; ?? Rußverkollerung	1328-53-6; 81-77-6; 1333-86-4; -
17098069	neutral grey D	PBr 6; PBk 11	Iron oxide; Iron oxide black	72669-22-8; 1317-61-9
17098071	neutral grey F	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098072	neutral grey G	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098073	neutral grey H	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098074	neutral grey J	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098075	neutral grey K	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098076	neutral grey L	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098077	neutral grey M	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098078	neutral grey N	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17098079	neutral grey O	PW 6; PBr 6; PBk 11	Titanium dioxide; Iron oxide; Iron oxide black	13463-67-7; 72669-22-8; 1317-61-9
17099069	black D	PBk 7; PBk 9; PBk 11	Lamp black; Carbonized bones of animals; Iron oxide black	1333-86-4; 8021-99-6; 1317-61-9
17893069	gold D	Effect-pigment	Effect-pigment	-
17894069	silver D	Effect-pigment; PBk 7	Effect-pigment; Lamp black	-; 1333-86-4
17910073	white pearl H	Effect-pigment	Effect-pigment	-
17920073	yellow pearl H	Effect-pigment; PY 74	Effect-pigment; Monoazo	-; 6358-31-2
17930073	rose pearl H	Effect-pigment; PV 19	Effect-pigment; Quinacridone	-; 1047-16-1
17940073	blue pearl H	Effect-pigment; PB 15:1	Effect-pigment; Phthalocyanine (Cu)	-; 147-14-8
17950073	green pearl H	Effect-pigment; PG 7	Effect-pigment; Phthalocyanine (Cu, Cl)	-; 1328-53-6