



# The Color of Art Pigment Database: Pigment Yellow, PY

Artist's Paint and Pigments Reference: Color Index Names, Color index Number and Pigment Chemical Composition

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## Yellow Pigments

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Where applicable, you can click on the artist paint or pigment [company code](#) found in the "Common Historic and Marketing Name Column" next to the pigments name. The links will take off site where you can find more specific paint, binder, and pigment properties, including MSDS sheets or a retailer that stocks that brand of paint or pigment. Just hit your back button to return. See the [Key](#), at the bottom of any page for the artist media or binder [company codes](#) and links to the brands websites. NOTE: *d* in italics indicates a discontinued paint or pigment, all other medium or binder codes in *italics* mean the pigment/paint is in the student grade, not the "artists" professional premium paint. See the [Key](#) (at the bottom of the page) for artist media and [binder codes](#).



## Historic Yellow Pigments without Color Index Names

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Color Index Generic Name	CI Pigment Name	Common, Historic and Marketing Names	C.I. Constitution Number	Chemical Composition	Color Description † = Long Term Effects of Light	Opacity 1 = opaque 4 = trans.	Light Fastness I = excell. IV=Fugitive	Oil Absorption g/100mg		Side Notes
N/A	Bile Yellow	Bile Yellow; Lombard Gold	N/A	Fish bile or gall stones, chalk, & vinegar	-	-	-	-	A	-
N/A	Cerium Yellow	Cerium Oxide; Cerium Sesquioxide; Cerium Yellow;	77280	Cerium oxide? (Ref Color index 3rd Ed., V.4, Inorganic colorants CI 77280); (Ref <a href="#">Pigment Compendium, 2008, p.96</a> ); Cerium(III) oxide?; Cerium sesquioxide (Ref <a href="#">wikipedia</a> ).  Cerium oxide: CAS 1306-38-3 Cerium(III) oxide: CAS 1345-13-7	Pale yellow to orange yellow	-	-	-	A	-
N/A	Jarosite	Antunesite; Antunesita;	N/A	Natural yellow mineral of Potassium Iron Sulfate Hydroxide (Ref. <a href="#">The Mineral</a> )	Pale reddish Yellow	1	I	M	A	"jarosite is resistant to atmospheric gases, is lightfast and possess good hiding  <a href="#">MSDS</a>

		Antunezite; Antunezita; Antunezite; Antunit; Gelbeisenerz; Gelbeisenerz (of Hausmann); Jarosit; Jarosita; Jarosite [GEN   KP.p   <a href="#">NP.p</a> ]; Jarosite (of Breithaupt); Leucanterit; Leucanterita; Leucanterite; Vitriolgelb; Yellow Jarosite [GEN   <a href="#">NP.p</a> ]		<a href="#">Jarosite, from galleries.com</a> , <a href="#">(Ref webmineral.com)</a> , <a href="#">(Ref wikipedia)</a>  CAS 12207-14-6						power" ( <a href="#">Ref Safely Handling Artist's Materials @ Natural Pigments</a> );  Found on Mars, it's said this mineral can not form without liquid water, ( <a href="#">Ref skyandtelescope.com</a> )
N/A	Lead-Tin Antimony Yellow	Lead-Tin Antimony Yellow	N/A	Ternary oxide of lead, tin and antimony ( <a href="#">Ref northernlightstudio.com</a> );  Pb <sub>2</sub> SnSbO <sub>6,5</sub>  <a href="#">Production and characterization of lead, tin and antimony based yellow pigments. (DOC file)</a> , by C. Pelosi, U. Santamaria, G. Agresti, E. Mattei, A. De Santis, Production and characterisation of lead, tin and antimony based yellow pigments, Proceedings of the International Conference Conservation Science 2007, Milan 10-11 May, 2007, Edited by Joyce H. Townsend, Lucia Toniolo and Francesca Cappitelli, Archetype Publication, 2008, pp. 187-188  <a href="#">ARTIFICIAL YELLOW PIGMENTS</a> , A study of lead, tin and antimony based yellow pigments <a href="#">PDE</a> .	Reddish Yellow	1	I	15	C	Differs from Naples yellow which is pure lead antimonate ( <a href="#">Ref northernlightstudio.com</a> );  Contains lead; may darken by atmospheric hydrogen sulfide;
N/A	Lead-tin Yellow, type I	Amarelo de estanho e chumbo; Amarillo de plomo estano ; Bleinzinngelb; Giallo di piombo e stagno; Giallolino*; Giallorino*; Jaune de plomb étain; Kitrino molybdoy - kassiteroy; Lead Stannate; Lead Tin Orange [ <a href="#">NP.p</a> ]; Lead Tin Oxide; Lead-tin Yellow; Lead-tin Yellow, type 1; Lead-tin Yellow Lemon (type I) [ <a href="#">NP.o.p</a> ]; Lead-tin Yellow Light (type I) [KP.p   <a href="#">NP.p</a> ]; Lead-tin Yellow (type I)	77629	Lead stannate, prepared from a heated mixture of lead dioxide with tin dioxide; Lead-tin oxide; ( <a href="#">Ref Natural Pigments</a> )  Chemical composition : Pb <sub>2</sub> SnO <sub>4</sub>  Lead-tin yellow ( <a href="#">Ref info CAMEO Materials Database MFA, Boston</a> ); <a href="#">(Ref at Kremer Pigments)</a> ;  <a href="#">Artificial Yellow Pigments: Production and Spectroscopic Characterization, e-PS, ©2010, 7, 108-115</a> , A study of lead, tin and antimony based yellow pigments <a href="#">PDE</a> .  CAS 12143-43-0 CAS 12036-31-6	Light bright yellow	1	I	16-25	C <a href="#">MSDS</a>	Contains lead; may darken by atmospheric hydrogen sulfide; ( <a href="#">Ref naturalpigments.com</a> )  *It is now generally thought the following historic terms referred to lead-tin yellow: giallolino; giallorino; massicot; masticot; ( <a href="#">Ref info CAMEO Materials Database MFA, Boston</a> );

		[GEN   <a href="#">KP.p</a>   <a href="#">NP.o.p</a> ]; Lood-tingeel; Massicot*; Masticot*;								
N/A	Lead-tin yellow, type II	Amarelo de estanho e chumbo; Amarillo de plomo estano ; Bleinzinngelb; Giallo di piombo e stagno; Giallolino*; Giallorino*; Jaune de plomb étain; Kitrino molybdoy - kassiteroy; Lead Stannate; Lead-tin Yellow, Lead-tin Yellow, type 2; Lead-tin Yellow Dark (type II); [ <a href="#">NP.p</a> ]; Lead-tin Yellow Deep [ <a href="#">KP.p</a> ]; Lead-tin Yellow (type II) [ <a href="#">GEN</a>   <a href="#">KP.p</a> ]; Lood-tingeel; Massicot*; Masticot*	77629	Lead-tin oxide with tin oxide and silicon; Lead-Tin Oxide Silicate; Made by fusing lead, tin, and quartz.; ( <a href="#">Ref Natural Pigments</a> );  Lead-tin yellow ( <a href="#">Ref info CAMEO Materials Database MFA, Boston</a> ); ( <a href="#">Ref at Kremer Pigments</a> ); <a href="#">Artificial Yellow Pigments: Production and Spectroscopic Characterization, e-PS, ©2010, 7, 108-115</a> , A study of lead, tin and antimony based yellow pigments <a href="#">PDF</a> .  Making pigment lead-tin yellow type II at <a href="#">webexhibits.org</a>  CAS 12143-43-0; CAS 8012-00-8	Redder and deeper than type 1	2	I	16-25	C <a href="#">MSDS</a>	Contains lead; may darken by atmospheric hydrogen sulfide  *It is now generally thought the following historic terms referred to lead-tin yellow: giallolino; giallorino; massicot; masticot; ( <a href="#">Ref info CAMEO Materials Database MFA, Boston</a> );
N/A	Limonite	Bog Ore; Brown Hematite; Brown Ocher; Eisenoxyd-Hydrate Ferrite (of Vogelsang); Ferrohydrite; Ferrum Limosum; Gel-goethite; Hydroferrite; Hydrosiderite; Hyposiderite; Limonite [ <a href="#">NP.p</a> ]; Marsh Ore; Meadow Ore; Morasterz; Ochre; Ortstein; Pecheisenstein; Perlimonite; Pigment Yellow 43; Raseneisenstein; Seeerz; Sumpferz; Umber; Yellow Ocher	77492	Natural mineral Iron Oxide Hydroxide; ( <a href="#">Ref and Pic mindat.org</a> ); ( <a href="#">Ref Natural Pigments</a> )	Light brown to dull light reddish yellow	1	I	35	A	-
N/A	Mori Yellow	Mori Yellow [ <a href="#">KP.p</a> ]; Yellow Marble; Yellow Marble Dust	N/A	Powdered yellow marble; Mostly Calcium carbonate with iron oxides or/and other mineral impurities	Light brownish Yellow	1-4*	I	-	A <a href="#">MSDS</a>	*depends on binder medium
N/A	Basic Mercury Sulfate	Basic Mercury Sulfate; Basic Sulfate of Mercury;	N/A	Mercury Oxide Sulfate or Basic Mercury Sulfate; Created by calcining at high	Bright true yellow	-	-	-	C	Once used as an emetic ( <a href="#">Ref Pigment Compendium, By Valentine Walsh, Tracey Chaplin, 2008, p.376</a> );

		Mercury Sulfate; Mercury Yellow; Queen's Yellow; Turbith Mineral; Turbith Minerall; Turpeth Mineral; Turpith Mineral;		temperature a mixture of mercury (quicksilver) and sulfuric acid (oil of vitriol) in equal amounts in a retort, until a white mass has condensed at the bottom. It is then cooled, the retort broken open and the white mass powdered. It acquires its yellow color after pouring water on the powder and grinding. Afterwards, it is washed, levigated and dried ( <a href="#">Reference recipe by Robert Dossie Handmaid to the Arts, by 1764 pg. 100-01</a> )  Prepared by heating mercury and sulfuric acid, of equal quantities, in a retort until the mercury changes to a white mass, which was then powdered and washed until it turned yellow, ( <a href="#">Ref Pigment Compendium, By Valentine Walsh, Tracey Chaplin, 2008, p.376</a> );						
N/A	Pararealgar	Arsenic Sulphide; Pararealgar	N/A	A form of Arsenic Sulphide created by exposing realgar to the sun; ( <a href="#">Ref CAMEO, Fine Arts Boston</a> ); ( <a href="#">Mindat Ref</a> ); ( <a href="#">Webmineral.com Ref</a> )  Pararealgar is an <a href="#">arsenic sulfide mineral</a> with the chemical formula $As_4S_4$ [1] also represented as $AsS$ . <sup>[3]</sup> It forms gradually from <a href="#">realgar</a> under exposure to light. Its name derives from the fact that its elemental composition is identical to realgar, $As_4S_4$ . ( <a href="#">Ref Wikipedia</a> );	Bright Reddish yellow	1	II	-	C	Found in ancient Byzantine manuscripts,  Pararealgar, a yellow pigment, is a light-induced transformation product of the orange/red pigment realgar ( <a href="#">Ref, Raman Microscopy of a 13th Century Illuminated Text, R. J. H. Clark and P. J. Gibbs</a> );  It is usually the unwanted effect of exposing Realgar to strong light.; ( <a href="#">Ref, The light-induced alteration of realgar to pararealgar, by D. L. Douglass., Chichang Shing, American Mineralogist, Vol. 77 article</a> );
N/A	Platina Yellow	Lemon Yellow; Platina Yellow; Potassium Chloroplatinate;	N/A	Made from Platinum;  "A yellow crystalline powder of potassium chloroplatinate. Platina yellow was sold for a short time in the late 18th and early 19th century as an artists pigment. It was initially called lemon yellow. Potassium chloroplatinate is now used in photography"; Potassium Chloroplatinate; Platinum (IV) Potassium Chloride; Potassium Platinichloride ( <a href="#">Ref CAMEO Materials Database, MFA Boston</a> );  Potassium hexachloroplatinate;  Dipotassium platinum hexachloride; ( <a href="#">Ref Chembook</a> );  Potassium platonic chloride ( <a href="#">Pic</a> );  CAS 16921-30-5	Orange to yellow*	4	-	-	B** <a href="#">MSDS</a> ; <a href="#">MSDS</a> ; <a href="#">MSDS</a> ;	<a href="#">Reference from Chromatography</a> by George Field, 1841;  * Color depends on how finely it is ground in artists paint.;  ** Material is irritating to mucous membranes and upper respiratory tract if inhaled. Exposure can cause coughing, chest pains, difficulty in breathing. May cause sensitization by inhalation. Can cause lung damage.
N/A	Safflower	Dyer's Thistle; False Saffron; Safflower; Safflower Yellow	N/A	Made from the Feverfew safflower petal (Carthamus tinctorius L.)	Red-Brownish Yellow	4	III	-	A	Used as a substitute or adulterant of saffron; water soluble; Used in Dyes and as food coloring;  Info on using as dye; <a href="#">Dyeing with Safflower</a>

										Wildcolours.co.uk; Info on Pigments made from Safflower @ <a href="#">the Safflower pigment institute of Tianjin</a>  Interesting nutritional data @ <a href="#">Sigma-Aldrich</a>
N/A	Tungsten Yellow	Artificial Scheelite; Calcium Wolframate; Giallo di Tungsteno; Jaune Minéral; Mineralgelb; Mineral Yellow; Scheelite*; Tungsten Yellow; Wolframgelb; Wolfram Yellow; Yellow Mineral	77250	Calcium tungstate; Tungsten yellow CaWO <sub>4</sub> , is a deep lemon-colored powder. Create the pigment by grinding the fine metallic tungsten powder with fused potassium carbonate. ( <a href="#">Ref: A Treatise on Colour Manufacture: By Georg Zerr, Robert Rübencamp, 1908, pg.155</a> )  * Scheelite is the natural mineral ( <a href="#">Ref Mineral at mindat.org</a> ); ( <a href="#">Ref: wikipedia</a> ); ( <a href="#">Ref at WebMineral.com</a> ); ( <a href="#">Ref. at minerals.net</a> ).  CAS 7790-75-2	Deep lemon yellow	-	-	-	-	-



## CI Natural Yellow Pigments

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Color Index Generic Name	CI Pigment Name	Common, Historic and Marketing Names	C.I. Constitution Number	Chemical Composition	Color Description † = Long Term Effects of Light	Opacity 1 = opaque 4 = trans.	Light Fastness I = excell. IV=Fugitive	Oil Absorption g/100mg		Side Notes
NY2	Reseda	Anatolian Reseda lutea; C.I. Natural Yellow 2; Natural Yellow 2; Reseda; Reseda Lemon [KP.p]	75580; 75590	Lake pigment, produced from weld ( <a href="#">Ref: Natural History Museum, UK</a> ) (Reseda Luteola L.) ( <a href="#">Ref: Natural Resources Conservation Service</a> ); ( <a href="#">Pic: from APHOTOFLORA</a> );  apigenin: CAS 520-36-5;  luteolin: CAS 491-70-3	Lemon Yellow	4	IV	-	A	-
NY3	Curcumin	C.I. Natural Yellow 3; Curcumin; Kurcum; Natural Yellow 3; Terra Merita; Turmeric; Turmeric Root [KP.p] Turmeric Powder [KP.p]; Turmeric Yellow	75300	Diferuloylmethane from the root of; <i>Curcuma Longa</i> , <i>C. Tinctoria</i> , <i>C. Rotunda</i> , <i>C. Vididiflora</i> .;  Demethoxy curcumin; Bisdemethoxy curcumin; Diferuloylmethane; Methane dyes;  Generally; known the spice Turmeric. ( <a href="#">Ref: The Handbook of Natural Colorants</a> );	Bright reddish yellow	4	III	-	A	Extracted From Tumeric, used to give the bright yellow coloring to typical American mustard;  <a href="#">CURCUMIN Chemical and Technical Assessment (CTA) First draft prepared by Ivan Stankovic © FAO 2004, PDF</a>  Diferuloylmethane said to have extremely beneficial antioxidant effects, (so much for the "If you can't pronounce it, don't eat it"

				<p>(<a href="#">Ref Natural Pigments Blog</a>);</p> <p>(<a href="#">Ref: wikipedia</a>);</p> <p>CAS 91884-86-5</p> <p>CAS 458-37-7</p>						crowd", hehe by the way, I can pronounce "Naples Yellow" and "lead" just fine, but just because it's easy to pronounce, you should not eat the stuff) ( <a href="#">Ref: Google Search</a> );
NY6	Saffron	African Saffron; C.I. Natural Yellow 6; Crocetin; Saffron; Natural Yellow 6; Wild Saffron [KP.p];	75140 75100	<p>Color dye extracted from the stigmas Crocus Sativa then precipitated onto lake base; A kilogram of saffron requires 20,000 flowers (<a href="#">Ref: Kremer Pigments</a>); (<a href="#">Ref wikipedia</a>);</p> <p>Made from Curcuma, vibrant warm yellow (<a href="#">Ref: Kremer Pigments</a>);</p> <p>"The term saffron in a pigment context, refers to a dye derived from the stamens of the plant Crocus sativus L., The Borradailes stated in their notes to the fifteenth century Strasbourg MS that it was 'prized by illuminators' . The main dyestuff produced is crocetin." (<a href="#">Ref Pigment Compendium, 2008, p.337</a>);</p>	Bright orange yellow	4	IV	-	A <a href="#">MSDS</a> ;	Fades completely; Recommended only for books were it would rarely be exposed to light or temporary illustration.
NY8	Morin	C.I. Natural Yellow 8; Calico Yellow*; Moric acid; Morin hydrate; Morina (Esp., Port.); Natural Yellow 8; Natural Yellow 11;	75660	<p>2',3,4,5,7-pentahydroxyflavone;</p> <p>(<a href="#">Ref CAMEO Materials Database MFA, Boston</a>);</p> <p>Found in the wood of the Dyer's Mulberry (Chlorophora tinctoria), common in the Americas and the West Indies, also can be found in the wood of the Osage Orange tree (Maclura pomifera or Toxylon pomiferum), and Oak trees. It is the only coloring matter in the Jackwood tree (Artocarpus integrifolia), from Burma , Ceylon and India (<a href="#">Ref: Color Index Constitution Numbers Third Ed, 1998</a>);</p> <p>CAS 480-16-0</p>	Olive Green to Intense bright yellow**	4	IV	-	A	*Calico Yellow is the bisulfite compound of morin  **Color depends on lake base
NY10	Quercitron Lake	American bark; Black oak; C.I. Natural Yellow 10; Flavine; Gallstone; Gulizaleel; Italian pink; Meletin; Natural Yellow 10; Quercetin; Quercitrón; Quercitron; Quercitron bark; Quercitron Lake; Quercitron; Sophoretin; Yellow lake;	75640 75650 75670 75680 75710 75720 75730 75750 75570	<p>Laked extract from the bark of Black Oak, or oxgall;</p> <p>A yellow vegetable dye extracted from the black or dark brown bark of the black oak, <i>Quercus velutina</i> formerly <i>Quercus nigra</i>; (<a href="#">Ref: Quercitron, CAMEO Materials Database MFA, Boston</a>);</p> <p>The dye principal colorants: Quercetin, Quercetagenin, Quercimeritrin and flavine</p> <p>Quercetin produces a bright yellow with aluminum and tin, a tan with chrome, and an olive green with iron.</p> <p>Quercetagenin produces shades of orange</p> <p>Flavine gives a brilliant yellow with alum or tin</p> <p>(<a href="#">Ref CAMEO Materials Database MFA, Boston</a>);</p>	Bright yellow	4	IV	-	A	Quercetin is often found in many yellow fruits and vegetables, considered a antioxidant, and may have other health benefits as well. ( <a href="#">google search</a> );

NY11	Fustic	Aurantica; Aurantine; Bois Jaune (Fr.); C.I. Natural Yellow 11; Carmin de Cuba; Cuba wood; Cubawood; Dyer's Mulberry; Geelhout (Ned.); Gaud (It.); Gelbholz; Gelholz (Deut.); Extract of Fustik [KP.p]; Fustic (Esp.); Fustik; Fustiikki; Gelbholz; Geschnitten; Keltapuu; Madera amilla de Cuba (Esp.); Mora; Moriini Morin; Old Fustic; Old Fustik; Natural Yellow 11; Natural Yellow Wood [KP]; Yellow Wood; Yellowwood;	75240 75660 75710 75720 75730 75750	Made from the heartwood of dyer's mulberry, a tropical tree of the Mulberry family <i>Chlorophora tinctoria</i> (formerly <i>Morus tinctoria</i> );, or <i>Maclura tinctoria</i> ; Soaking the wood for long periods produces a stronger color. Fustic contains the yellow flavonol colorant <a href="#">morin</a> . (Ref <a href="#">CAMEO Materials Database MFA, Boston</a> ); (Ref: <a href="#">Extract of Fusic Info from Kremer Pigments</a> );  Main coloring from Morin (C.I.75660)and Maclurin (C.I.75240): Crystallized from ethanol to form colorless needles, turning intense yellow in alkaline solutions.  2',3,4,5,7-pentahydroxyflavone;  Benzophenone, 2,3',4,4',6-pentahydroxy-  CAS 480-16-0	Greenish yellow-brown to bright orange yellow*  † Hue shift towards brown; Fades	4	III	-	A <a href="#">MSDS:</a>	*Dye colors can range from a pale yellow with alum to a dark tan with copper. Morin will react with aluminum to produce a green fluorescent compound.
NY12	Datiscetin	Acalbir; Akalbir; C.I. Natural Yellow 12; Natural Yellow 12	75630	Plant dye found in the leaves, branches and roots of <i>Datisca Cannabis</i> *, also known as False Cannabis, False Hemp or Bastard Hemp, because it resembles Cannabis Sativa, however it is completely unrelated.  Datiscetin	-	-	-	-	-	* Apparently becoming a <a href="#">popular plant in home gardens</a>
NY13	Stil de Grain* Dutch Pink Yellow Lake	Brown Lake; Brown Pink**; Buckthorn Lake; C.I. Natural Yellow 13; Citrine Lake; Dutch Pink**; Dutch Yellow; English Pink**; Indigo Yellow, Italian Pink**; Natural Green 2 Natural Yellow 13; Persian Lake; Persian Berry Lake; Pink**; Pinke***;	75430 75640 75660 75670 75690 75695	"The sources of yellow lake are numerous, but the best kind is obtained from quercitron bark from <i>Quercus tinctoria</i> , <i>Qu. nigra</i> , and <i>Qu. citrina</i> , three species of North American oak." (see below NY14) – from " <a href="#">The Chemistry Of Paints And Painting</a> ", by <a href="#">Arthur H. Church, 1901</a> , provided by chest of books, or <a href="#">see my free ebooks page here to download the full book</a>  Generally, the colorant, mainly Quercitron, was absorbed on chalk or alumina trihydrate to form the lake.  also extracted from the black	Greenish yellow to brown*** (see below)  Bright yellow in tints and thin layers, brownish in mass tone  † Hue shift towards brown; Fades	4	IV	-	A <a href="#">MSDS:</a> <a href="#">MSDS:</a> <a href="#">MSDS:</a>	* see below NY14 ** see below NY14

		<p>Quercitron Lake; Rhamno lake; Rhamnin; Spincervino lake; Stil de Grain?; Stil de Grain Brown; Stil de grain E [KP.p]; Stil de grain lake; Stil de Grain light [KP.p]; Stil de Grain, Schützenberger [KP.p]; Turkey Berries; Yellow Berries; Yellow Carmine; Yellow Lake; Yellow Madder;</p> <p><i>also see <a href="#">Sap Green NG2</a></i></p>		<p>or dark brown bark of the black oak, <i>Quercus velutina</i> (formerly <i>Quercus nigra</i>) with Quercitron as the main coloring component; (<a href="#">Ref: Dutch Pink, CAMEO Materials Database MFA, Boston</a>); (<a href="#">Ref: Quercitron, CAMEO Materials Database MFA, Boston</a>);</p> <p>Quercitron (<a href="#">Ref:wikipedia</a>) Quercitrin (<a href="#">Ref:wikipedia</a>): CAS 522-12-3</p> <p>Rhamnetin: CAS 90-19-7;</p> <p>Xanthorhamnin: CAS 1324-63-6;</p> <p>Rhamnazin: CAS 552-54-5</p> <p>Rhamnolutin, Kaempferol 7-methyl ether CAS 569-92-6</p>						
NY14	Stil de Grain*	<p>Brown Lake; Brown Pink***; Brown Stil de Grain; Buckthorn Lake; C.I. Natural Yellow 13; C.I. Natural Yellow 14; Citrine Lake; Dutch Pink***; Dutch Yellow; English Pink***; English Stil de Grain; Italian Pink***; Jaune-de-graine (yellow de seed); Natural Green 2 Natural Yellow 13; Natural Yellow 14; Persian Lake; Persian Berry Lake; Pink**; Pinke***; Quercitron Lake; Rhamno lake; Rhamnin; Spincervino lake; Stil de Grain (Fr.) [GEN   KP.p]; Stil de Grain Brown; Stil de Grain Brun; Stil de grain E [KP.p]; Stil de grain lake; Stil de Grain light [KP.p]; Stil de Grain, Schijtgroen litter (Dutch), (<a href="#">Ref</a>); Schützenberger [KP.p]; Turkey Berries; Yellow Berries;</p>	75440	<p>Lake extract of unripe Buckthorn or Purging Berries (<i>Rhamnus catharticus</i>, <i>R. cathartica</i>, <i>R. infectorius</i>, <i>R. oleoides</i>, <i>R. saxatilis</i>, <i>R. amygdalinus</i>, <i>R. catharticus</i>, <i>Rhamnus frangula</i>, ) Sap green (<a href="#">NG2</a>) is made from ripe berries;</p> <p>(<a href="#">Historical Pigments: Stil de grain Ref @ Natural Pigments Blog</a>); (<a href="#">Ref from Kremer Pigments</a>) (<a href="#">Ref from Kremer Pigments</a>)</p> <p>Other common names of the berries: Avignon Berries, Black plum, Blackthorn, Dyer's Bucktorn, Persian Berries, Purging Berries, Hungarian Berries, Turkish Berries</p> <p>"The sources of yellow lake are numerous, but the best kind is obtained from quercitron bark from <i>Quercus tinctoria</i>, <i>Qu. nigra</i>, and <i>Qu. citrina</i>, three species of North American oak." "Yellow lake was formerly made from the fruits of various species of buckthorn, known as Persian, Turkish, or Avignon berries." " 'Stil de grain,' and several of the continental yellow lakes, are made from the above-named berry" "Italian pink, Dutch pink, and deep yellow madder are names usually given to the richer yellow lakes of quercitron, although some of these pigments are occasionally prepared from Turkish or Avignon berries." – from "<a href="#">The Chemistry Of Paints And Painting</a>", by <a href="#">Arthur H. Church, 1901</a>, provided by chest of books, or <a href="#">see my free ebooks page here to download the full book</a></p>	<p>Greenish yellow to brown</p> <p>Bright yellow in tints and thin layers, brownish in mass tone</p> <p>Munsell: 5Y 9/10 (approximate)</p> <p>† Hue shift towards brown; Fades</p>	4	IV	-	<p>A</p> <p><a href="#">MSDS</a>: <a href="#">MSDS</a>: <a href="#">MSDS</a>:</p>	<p>* there is inconsistent and confusing literature and information on NY13 and NY14. Many sources seem to use both interchangeably.</p> <p>It appears that most often what is called Natural Yellow 14 (NY14), is what was originally called "stil de grain" made from Buckthorn Berries (<i>Rhamnus catharticus</i>).</p> <p>But, later, after approx. 1819, the pigment extracted from Black Oak was called "stil de grain".</p> <p>As far as I can determine, It seems Natural Yellow 13 (NY13), most often refers to that made with Black Oak and Quercitron as the main coloring matter. (<a href="#">Ref: Dutch Pink, CAMEO Materials Database MFA, Boston</a>); (<a href="#">Ref: Color Index Constitution Numbers Third Ed. 1998, numbers 75430, 75640; 75650; 75660, 75695; 75700; 75710;</a>).</p> <p>** Pink in this sense refers to a yellow pigment based on natural yellow dyes, usually the lake of an extract from Buckthorn Berries with the but may have been used for other dyes based on Quercitron. The word pink came into use during the sixteenth century; <a href="#">According to the 2008 version of the Pigment Compendium</a>, "there is speculation that because of the yellow color, it is derived from the German "pinkeln" translated in a dictionary of 1798 (by Adeling and Schwann) as 'to piss, to make water'." (<a href="#">Reference Pigment Compendium, 2008, by Nicholas Eastaugh, Valentine Walsh, Tracey Chaplin and Ruth Siddall</a>)</p> <p>***Color depends on ripeness of the berries and precipitant; Deep yellow lake on alum and</p>



		<p>Yellow Carmine; Yellow Lake; Yellow Madder; Yellow Stil de Grain;</p> <p>also see <a href="#">Sap Green NG2</a></p>		<p>Generally, the colorant was absorbed on clay, chalk or alumina trihydrate to form the lake, mixed with alum and precipitated with an alkali (sodium carbonate) (<a href="#">Ref. pigments-historiques.blogspot, here is an english translation</a>)</p> <p>After 1819, it was also extracted from the black or dark brown bark of the black oak, <i>Quercus velutina</i> (formerly <i>Quercus nigra</i>) with Quercitron as the main coloring component; (<a href="#">Ref. Dutch Pink, CAMEO Materials Database MFA, Boston</a>); (<a href="#">Ref. Quercitron, CAMEO Materials Database MFA, Boston</a>);</p> <p>Main coloring from Emodin, Frangula-emodin (from Buckthorn) (<a href="#">Ref. Chemicalbook.com</a>)</p> <p>CAS 518-82-1</p> <p>Rhamnetin: (<a href="#">Ref. Chemicalbook.com</a>) CAS 90-19-7</p> <p>Quercitron (Quercitrin): (main coloring in Oak) CAS 522-12-3</p>						<p>yellow brown on carbonates (<a href="#">Reference: A practical treatise on the manufacture of colors for painting, 1874</a>, also see the <a href="#">Free Art Books page under Pigments, Art Conservation and Art Materials.</a>)</p>
NY20	Indian Yellow	<p>Amarillo Indian; Camel's Urine; C.I. Natural Yellow 20; Euxanthin; Euxanthine; Gaugoli; Giallo Indiano; Gogili; Hardwari Peori; Indian Yellow [GEN]; Indischgelb; Jaune Indien; Jaune Indien purifié; Monghyr; Natural Yellow 20; Peoli; Peori; Pioury; Piuri; Purrea arabicu; Purreie acid; Purree; Purée of India; Snowshoe Yellow;</p>	75320	<p>Extracted from urine of cows fed mango leaves?*</p> <p>(<a href="#">Reference Indian Yellow at Pigments through the ages</a>);</p> <p>Euxanthic (purreic) acid (<a href="#">Reference Examination of a yellow substance from India called Purree, from which the pigment called Indian Yellow is manufactured. By John Stenhouse, Ph.D.</a>);</p> <p>Euxanthone;</p> <p>Calcium salts and magnesium euxanthate*** (<a href="#">compare PY108 Anthrapyrimidine Yellow</a>)(<a href="#">Reference Pigment Compendium, 2008, by Nicholas Eastaugh, Valentine Walsh, Tracey Chaplin and Ruth Siddall</a>).</p>	Bright reddish yellow	4	II?*	H	A	<p>* Untested by ASTM, reported by some sources to be a highly lightfast pigment (<a href="#">Ref: Painting Materials: A Short Encyclopaedia By Rutherford John Gettens, ©1966 by Dover Publications, p.119</a>).</p> <p>** Urine of cows origin Questioned (<a href="#">Ref Color: a natural history of the palette By Victoria Finlay, ©2002, published by Random House 2004, p.203-211</a>); (<a href="#">Ref: Google</a>); (<a href="#">Ref: wikipedia</a>);</p> <p>If Indian yellow did come from cows urine, the common claim that they were cruelly "force fed" mango leaves is probably false. Mango Leaves are high in minerals, vitamins and protein and also anti-viral and antibacterial. Mango leaves may have been a perfect feed for cattle and not "cruel" at all (<a href="#">Ref: Feeding Value of Mango Leaf (<i>Mangifera indica</i>) for Growing Rabbits, Journal of Animal and Veterinary Advances, 2006, Vol: 5, Issue: 10, Page No.: 800-804</a>), (<a href="#">Ref: Effects of feeding mango (<i>Mangifera indica</i>) and shaora (<i>Strobilus asper</i>) tree leaves to Black Bengal goats of Bangladesh, by M.A. Akbar, M.N. Alam, Small Ruminant Research, Volume 6, Issue 1, Pages 25-30, October 1991</a>); (<a href="#">Ref: MDidea.com Herbal Extracts</a>); (<a href="#">Ref: healthmad.com</a>).</p>

									<p>"Mangos grow well in pastures, although cattle will graze off lower leaves. It is necessary to fence off young trees for the first 3–4 years to protect them from livestock." – In other words the Mango leaves need to be protected from the cattle, because the cattle love them! (<a href="#">Ref p.16 under Silvopasture, of "Species Profiles for Pacific Island Agroforestry: Mangifera indica (mango)"</a>),</p> <p>***Daniel Smith has a water base paint containing magnesium euxanthate (PY108) as the pigment (<a href="#">Ref: at Daniel Smith</a>).</p> <p><a href="#">Also see my blog article on Indian Yellow</a></p>
NY24	Gamboge	<p>Cadie Gum; Cambadium; Camboge; Cambogia; Cambogium; Camborge; Ceylon gamboge; C.I. Natural Yellow 24; Drop Gum; Gamboge; Gamboge [GEN   KP.p]; Gamboge Genuine [WNd]; Gamboge, powder [KP.p]; Gambodium; Gambogium; Gamboji (Jap.); Giallo Cambogia (It.) Gomma Gutti; Gokatu Gamboge; Gomaguta (Esp., Port.); Gomma gutta (It.); Gomme-gutte (Fr.); Gum Gamboge Powder; Gum Gutte; Gummigutt (Deut.); Guti ambar; Gutta gamba; Gutto gumbo; Kiyo (Jap.); Natural Gamboge; Natural Yellow 24; Pipe Gamboge [KP.p]; Rattan Yellow; Siam gamboge; Shio (Jap.); Tom Rong; Wisteria Yellow</p>	-	<p>"A yellow-orange gum-resin produced by several species of <i>Garcinia</i> tree";</p> <p>"Gamboge is composed of a yellow resinous component (70-80%; morelloflavone) and a clear water-soluble gum (20%)" - (<a href="#">Ref: Gamboge, CAMEO Materials Database MFA, Boston</a>); (<a href="#">Ref: Gokatu Gamboge, CAMEO Materials Database MFA, Boston</a>);</p> <p>Resin extract from the <i>Garcinia hanburyi</i> tree; (<a href="#">Ref wikipedia</a>);</p> <p>Coloring from Xanthoness and Hydroxanthoness</p> <p>Gambogic acid Isogambogic acid Morellic acid Isomorellic acid Morellin Morellinol Isomorellinol Desoxymorellinol Dihydroisomorellin Neogambogic acid (<a href="#">Ref: Winter, J. 1997, Gamboge, Artists' Pigments, a Handbook of their History and Characteristics vol 3: p.143–55, Washington, D.C.: National Gallery of Art.</a>)</p> <p>CAS 9000-25-3</p>	<p>Bright deep yellow to dullish yellow orange pigment;</p> <p>†Fades</p>	4	IV	-	<p><b>B**</b> <b>MSDS</b></p> <p>Fades completely; Recommended only for books were it would rarely be exposed to light or temporary illustration.</p> <p>** Ingesting 7 grams or more is poisonous, But in very small doses it is sometimes used as a Herbal <a href="#">hydragogue cathartic</a> (<a href="#">Ref:Medical-dictionary</a>). (<a href="#">Ref: henriettesherbal.com</a>);</p>

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 CI Pigment Yellow

 Historic Yellow Pigments Without C.I. Names | CI Natural Yellow | CI Pigment Yellow |  | [Page Top^](#)

Color Index Generic Name	CI Pigment Name	Common, Historic and Marketing Names	C.I. Constitution Number	Chemical Composition	Color Description † = Long Term Effects of Light	Opacity 1 = opaque 4 = trans.	Light Fastness I = excell. IV=Fugitive	Oil Absorption g/100mg		Side Notes
PY1	Hansa Yellow G	Arylide yellow G; Azo Yellow Orange <a href="#">[WN.d]</a> ; Blockx Yellow <a href="#">[BX.d]</a> ; Brilliant Yellow; Brilliant Yellow Pale; Cadmium Orange Hue <a href="#">[UT.a.d]</a> ; Cadmium Yellow (hue); Cadmium Yellow Deep substitute <a href="#">[SE.p]</a> ; Cadmium Yellow Hue <a href="#">[PF.d]</a> ; Cadmium Yellow Light Hue <a href="#">[HO.o]</a>   <a href="#">MR.o</a>   LK]; Cadmium Yellow Medium Substitute <a href="#">[SE.p]</a> ; Caution Yellow <a href="#">[MA.o(HD)]</a> ; Chrome Lemon (hue); C.I. Pigment Yellow 1; Hansa Yellow G [GEN]; Helio Genuine yellow Light [LK.d]; Helio Yellow; Helio Genuine Yellow Light [LK.w.d]; Lemon Yellow; Light Fast Yellow G; London Yellow <a href="#">[WN.d]</a> ; Monoazo Yellow; Monolite Yellow G; Naples Yellow Substitute <a href="#">[SE.p]</a> ; Permanent Yellow <a href="#">[HO.g]</a> ; Permanent Yellow Deep <a href="#">[HO.g]</a> ; Permanent Yellow Lemon <a href="#">[MA.o(artis)]</a> ; Permanent Yellow Light <a href="#">[MA.p]</a> ; Permanent Yellow Medium <a href="#">[WL.o.d]</a> ; Pigment Yellow 1; Pigment Yellow G; Primary Yellow <a href="#">[SE.os]</a> ; Spectrum Yellow <a href="#">[WN.g]</a> ; Yellow <a href="#">[HO.a]</a> ; Yellow Lake <a href="#">[MH.o]</a>	11680	Monoazo ; Arylamide;  CAS 2512-29-0	Bright Light Medium to reddish Yellow;  †Darkens in masstone, fades in tints ( <a href="#">Ref handprint</a> )	2-3	II-III*  BWS 7-8;6-7;5-6 <a href="#">(guerra paint)</a>	32-40	A  <a href="#">MSDS</a>	One of the first modern bright yellow azo pigments in artist's paints, introduced in Germany in 1911 ( <a href="#">Ref PCImag.</a> );  * ASTM II but some manufacturer literature and other tests put it at only 5-6 blue wool scale in tints. May be best to avoid, PY 154 is similar shade and more light fast ( <a href="#">Ref handprint</a> )
PY1:1	Monolite Yellow G	Arylide yellow G <a href="#">[DR.g]</a> ; Cadmium Yellow Deep Hue <a href="#">[DR.a(s3hb).a(s3mb)]</a> ; Cadmium Yellow Orange Hue <a href="#">[SE.o.g]</a> ; Chrome yellow (hue); C.I. Pigment Yellow 1:1;	11680:1	Monoazo ; Arylamide;  CAS 12240-03-8	Bright Light Medium to deep Yellow*	1-2	II	-	A	* Usually slightly redder than PY1; Probably suffers the same poor light fastness of PY1

		<p>Eijon Yellow 2R;  Hansa Yellow;  Helios Orange [GU];  Monolite Yellow G;  Permanent Yellow Deep;  Pigment Yellow 1:1;  Yellow Lake Deep [<a href="#">MH.o</a>]</p>								
PY2	Hansa Yellow GR	<p>C.I. Pigment Yellow 2;  Hansa Yellow GR;  Pigment Yellow 2</p>	11730	<p>Monoazo ;  Arylamide;  CAS 6486-26-6</p>	Bright yellow	-	-	-	A	-
PY3	Hansa Yellow 10G	<p>Antique Lemon [<a href="#">HO.w(ant)</a>];  Arylamide Yellow;  Arylide yellow 10G;  Arylide yellow light [SQ.a   <a href="#">TA.a.af</a> ]  Azo Yellow Lemon [<a href="#">OH.a.o.w</a>   <a href="#">RT.a</a>];  Blockx Yellow [<a href="#">BX.w</a>];  Bright Yellow Lake [<a href="#">MH.o</a>];  Brilliant Yellow;  Cadmium Lemon Azo;  Cadmium Lemon Hue [<a href="#">SE.o</a>];  Cadmium Yellow Lemon Hue [<a href="#">HO</a>   <a href="#">MR.o</a>   <a href="#">SE.o</a>];  Cadmium Yellow Light Hue [<a href="#">LQ.a</a>];  C.I. Pigment Yellow 3;  Hansa 10G [GU];  Hansa Yellow [CL   <a href="#">LA.a</a>   <a href="#">MG.a.a.g.o.w</a>];  Hansa Yellow Deep [RGH.o];  Hansa Yellow Light [GEN   DS.a.i.o.w   <a href="#">DV.a.af.k.o.w</a>   <a href="#">GB.o.o</a>   <a href="#">GO.a.ab.af.ag.aq</a>   <a href="#">KA.o.p</a>   RGH.o];  Hansa Yellow Light Lemon [<a href="#">DV.w</a>];  Hansa Yellow Pale [<a href="#">UT.a</a>];  Helio Genuine Yellow Lemon [LK];  Helio Yellow;  Japanese Yellow Lemon [<a href="#">LB.o</a>];  Juane Citron [<a href="#">LB.o</a>];  Lemon [<a href="#">HO.a</a>];  Lemon Yellow [GEN   AS   <a href="#">DB.o.o.w</a>   <a href="#">DR.a.a.a(s3hb)</a>, <a href="#">a(s3mb)</a>, <a href="#">g.o(georg)</a>, <a href="#">o.w.w</a>   <a href="#">GR.w.w</a>   <a href="#">HO.ag</a>   <a href="#">LA.a</a>   <a href="#">LB.o</a>   <a href="#">MA.a.g</a>   <a href="#">RT</a>   <a href="#">SE.a.o.w</a>   <a href="#">SCH.a.g.o.o(Mus)</a>, <a href="#">p</a>   <a href="#">UT.w*</a>?   <a href="#">SE.o.p.t</a>   <a href="#">WN.a.a.g.wo</a>];  Lemon Yellow Hansa [<a href="#">SE.a</a>];  Lemon Yellow Hue [<a href="#">WN.o</a>];  Lemon Yellow (Primary) [<a href="#">HO.ag.g</a>   LK];  Life Yellow [<a href="#">MA.o(HD)</a>];  Light Yellow [<a href="#">HO.a</a>];  Monolite Yellow;  Permanent Lemon [<a href="#">WL.o</a>];  Permanent Yellow;  Permanent Yellow Lemon [<a href="#">MA.o(artis)</a>, <a href="#">p</a>];  Permanent Yellow Light [<a href="#">WL.o.p</a>];  Pigment Yellow 3;  Primary Yellow [LK];  Primrose Yellow [AS];  Scheveningen yellow lemon [<a href="#">OH.o.w</a>];  Studio Yellow [KP.p];  Titanium Yellow (hue) [<a href="#">PF.w</a>];  Turner's Yellow (hue);</p>	11710	<p>Organic;  Monoazo;  Arylamide;  CAS 6486-23-3</p>	<p>Bright light lemon yellow;  Green undertone;  †Darkens, fades Hue shift towards brown</p>	3	I-II**	32	<p>A  <a href="#">MSDS</a>  <a href="#">MSDS</a></p>	<p>PY 97 or PY 154 are similar and more light fast, PY175 is a nice lemon yellow too.</p> <p>*?According to the <a href="#">MSDS Sheet</a>, Utrecht Artists' Watercolor Paint "Lemon Yellow" is PY3. There is a typo on the website indicating it is PY37, judging by the price and that, according to the website, it's a series 4 color it is more likely PY37?</p> <p>** ASTM I (Color Index third ed), many paint suppliers put it at a II (very good) and lightfastness may be even lower in tints. In watercolor some brands perform even worst (<a href="#">Ref see PY3 at handprint.com</a>).</p>

		Winsor Lemon <a href="#">[WN.k.o]</a> ; Yellow Light Hansa <a href="#">[CR   DB.a   LQ.a   MT]</a> ; Zinc Yellow Hue <a href="#">[GR.o]</a>								
PY4	Arylide Yellow 13G	Acetoacetyl; Arylide Yellow 13G; C.I. Pigment Yellow 4; Eljon Yellow 5G; Hansa Yellow; Lemon Yellow <a href="#">[LB.av.o]</a> Pigment Yellow 4	11665	Monoazo; Arylamide;  CAS 1657-16-5	Bright greenish yellow	-	II	-	A	-
PY5	Hansa Yellow 5G	Arylide Yellow; C.I. Pigment Yellow 5; Hansa Yellow 5G; Pigment Yellow 5	11660	Monoazo; Arylamide;  CAS 4106-67-6	Bright greenish yellow	-	-	-	A	-
PY6	Hansa Yellow 3G	C.I. Pigment Yellow 6; Hansa Golden Yellow; Permanent Yellow Orange <a href="#">[HO.g]</a> ; Pigment Yellow 6	11670	Monoazo; Arylamide;  CAS 4106-76-7	Bright yellow	-	II-III	-	A	-
PY9	Azo Yellow 2GX	Azo Yellow 2GX; C.I. Pigment Yellow 9; Pigment Fast Yellow GRL; Pigment Yellow 9	11720	Monoazo;  CAS 6486-24-4	Yellow	-	-	-	A	-
PY10	Hansa Yellow R	Arylide Yellow; C.I. Pigment Yellow 10; Hansa Yellow; Pigment Yellow 10	12710	Pyrazolone azo;  CAS 6407-75-6	Reddish yellow	-	-	-	A	-
PY12	Benzidine Yellow G	Benzidine Yellow G; C.I. Pigment Yellow 12; Dairylyde Yellow 12; Dairylyde Yellow AAA; Disazo Yellow; Pigment Yellow 12	21090	Disazo;  CAS 6358-85-6	Brownish orange yellow	4	II-III	45	A	used mainly for inks
PY13	Benzidine Yellow GR	Arylamide Yellow; Benzidine Yellow GR; C.I. Pigment Yellow 13; Dairylyde Yellow AAMX; IRGALITE Yellow BAW; Orange Red; Pigment Yellow 13; Vulcan Fast Yellow GR	21100	Disazo; Diarylyde m-xylylide;  CAS 5102-83-0	Bright Reddish yellow	2	II-III	48	A	slightly more lightfast than PY12; used mainly for inks
PY14	Diarylyde Yellow AAOT	Azo Yellow 13GX; Benzidine Yellow AAOT; C.I. Pigment Yellow 14; Dairylyde Yellow; Diarylyde Yellow OT; Disazo Type 11; Isol Diaryl Yellow; PERMANENT YELLOW 2GB; Pigment Yellow 14; Transparent Lemon <a href="#">[HO.o]</a> ; Vulcan Fast Yellow G	21095	Disazo Type 11 Toluidide;  CAS 5468-75-7	Yellow leaning towards green	3	II-III BWS 5;3-4;23 (Sun Chemical)	40-68	A <a href="#">MSDS</a>	Used mainly in inks
PY16	Permanent Yellow NCG	C.I. Pigment Yellow 16;	20040	Disazo;	Bright greenish	3	II-III	-	A	main use in inks

		Dairylike Yellow; Pigment Yellow 16; Permanent Yellow [GU]		CAS 5979-28-2	yellow		BWS 7-8;6;5-6 ( <a href="#">guerra paint</a> )			
PY17	Dairylike Yellow 17	Arylamide Yellow; Benzidene Yellow G; Benzidene Yellow GG; C.I. Pigment Yellow 17; Dairylike Yellow 17; Damascus Yellow [ <a href="#">MA.o(Med)</a> ]; Permanent Yellow 2G; Pigment Yellow 17; Transparent Yellow [ <a href="#">MA.o(artis)</a> ]; Yellow Benzidine	21105	Organic; Disazo; Benzidene; CAS 4531-49-1	Bright green shade yellow	4	II-III?*	55	A?*	* Procedures for preparing permanent yellow vary, when prepared with proper procedures, pigment yellow 17 has pretty good permanence to light. "Artists may want to conduct their own lightfastness tests to verify that the manufacturer has selected quality pigment" ( <a href="#">Ref: Dick Blick Pigment Info</a> );  ** benzidine dyes are believed to be so insoluble in water that they are unlikely to be absorbed ( <a href="#">Ref: Dick Blick Pigment Info</a> );
PY21	C.I. Pigment Yellow 21	C.I. Pigment Yellow 21; Pigment Yellow 21;	-	Organic	Bright greenish yellow	-	II	-	-	-
PY24	Flaventhron Yellow	C.I. Pigment Yellow 24; Flaventhron Yellow [GU]; Flaventhron Yellow Deep [GU]; Nickel Titanate Gold [GU]; Pigment Yellow 24; Pigment Yellow 112; Vat yellow 1	70600	Dairylike; Anthraquinone; Flavanthron; Heterocyclic Anthraquinone  CAS 475-71-8	Mid-shade to reddish Yellow	4	I  BWS 6;7;8** ( <a href="#">guerra paint</a> )	12-35	A	* same pigment as PY112? ( <a href="#">Ref</a> ) ** appears to be more light fast in tints
PY30	Lead Oxchloride	Cassel Yellow; C.I. Pigment Yellow 30; English Yellow; Kasseler yellow; Lead Chloride Oxide; Montpelier yellow; Mineral Yellow; Oxchloride of Lead; Patent yellow; Pigment Yellow 30; Turner's Yellow	77592	Inorganic; Oxchloride of lead	Bright greenish yellow to dull yellow*	1	I	L	C	may darken by atmospheric hydrogen sulfide;  * Color depends on lead oxide content ( <a href="#">Ref</a> )
PY31	Barium Chromate	Barium Chromate; Barium Chrome; Barium Yellow [KP.p]; Baryta Yellow; Baryte Yellow [ <a href="#">BX.o</a> ]; Barytgelb; C.I. Pigment Yellow 31; Jaune d'outremer; Lemon Yellow [ <a href="#">MH.o</a> ]; Permanent Yellow; Pigment Yellow 31; Platina Yellow (hue); Steinbühl yellow; Steinbühlergelb; Ultramarine Yellow; Yellow Ultramarine	77103	Inorganic; Barium chromate is synthetic mineral pigment; Barium chromate oxide; Chromic acid barium;  Making pigments: lemon Yellow at <a href="#">webexhibits.org</a>  CAS 10294-40-3	Light Lemon yellow*  †Hue shift towards green ( <a href="#">Ref</a> )	3	I	18-23	C  <a href="#">ICSC</a>	May turn greenish in oils ( <a href="#">Ref</a> );  "When heated, it becomes reddish, and when cold, it is pure yellow again" ( <a href="#">Ref Dictionary of Artists' Oil Pigments</a> : Their Chemical and Physical Properties by R. Bruce Handlong, 1969)  * "Original" lemon yellow (Ref Color Index 3rd Ed)

PY32	Strontium Chromate	C.I. Pigment Yellow 32; Citron Yellow; Deep Lemon Yellow; Delta Strontium Chromate; Micronized Strontium Chromate; Lemon Yellow; Pigment Yellow 32; Strontaine Yellow; Strontian Yellow; Strontium Chrome Yellow; Strontium Yellow; Ultramarine Yellow;	77839	Inorganic; Strontium chromate(VI), SrCrO4 Chromic acid strontium salt; (Ref), (MSDS)  CAS 7789-06-2	Pale yellow *  †Hue shift towards green (Ref)	2	I	16-27	B <a href="#">MSDS</a> <a href="#">ICSC</a>	corrosion inhibitor, may be found in industrial coatings  * may turn greenish due to the partial conversion to chromium oxide (Ref <a href="#">Pigment Compendium, 2008, p.361</a> );
PY33	Calcium Chromate	Calcium Chromate; C.I. Pigment Yellow 33; Gelbin; Steinbühler Gelb	77223	Calcium Chromate; Basic calcium chromate;	Very Pale Yellow to deep yellow*	-	II	-	B	Usually used as an extender in yellow paints (Ref <a href="#">Artists' Pigments: a Handbook of their History and Characteristics (vol 1)</a> )  * Higher temperatures during manufacture make deeper hues (Ref <a href="#">Color index 3rd Ed., V.4, Inorganic colourants CI 77223</a> )
PY34	Lead Chromate	Amarillo de Cromo; Canary Chrome Yellow; Chrome Green; Chrome Orange; Chrome Red; Chrome Yellow; Chrome Lemon; Chrome Lemon Yellow [ <a href="#">WNd</a> ]; Chrome Yellow Lemon [ <a href="#">MA.o(artis).p</a> ]; Chrome Yellow Light [ <a href="#">MA.o(artis).p</a>   <a href="#">SE.p</a> ]; Chrome Yellow Medium [ <a href="#">MA.o(artis)</a> ]; Chrome Yellow Deep [ <a href="#">MA.o(artis).p</a>   <a href="#">SE.p</a>   <a href="#">WNd</a> ]; Chrome Yellow Medium [ <a href="#">SE.p</a> ]; Chrome Yellow Orange; Chromgelb; C.I. Pigment Yellow 34; Cologne Yellow; Crocoite; Deep Chrome Yellow; Dianichi Chrome Yellow G; Giallo di Cromo; Golden Chrome Yellow; Gothaergelb; Jaune de Chrome; Jaune de Cologne; Jaune Minérale;; King's Yellow; Lead chromium oxide; Leipzig Yellow; Lemon Chrome; Light Chrome; Paris Yellow; Phoenicochroite;	77600 77603	Synthetic Lead Chromate; Neutral Lead Chromate; Lead chromium oxide; Lead sulfochromate yellow; Can be extracted from natural Crocoite;  <a href="#">LBNL Pigment Database Spectral radiative properties;</a> <a href="#">Chrome Yellow</a>  Method of making Chrome Yellow at <a href="#">webexhibits.org</a>  CAS 1344-37-2; CAS 7758-97-6	Very light, bright greenish to mid to reddish yellow; †Fades; Darkens over time when exposed to hydrogen sulfide fumes in the air; Hue shift towards green or brown. (Ref)	1-2	II	30	C <a href="#">MSDS</a> <a href="#">MSDS</a> <a href="#">MSDS</a> <a href="#">MSDS</a> <a href="#">ECHA</a>	Contains lead; may darken by atmospheric hydrogen sulfide

		Pigment Yellow 34; Platina Yellow (hue); Plumbous Chromate; Primrose Chrome; Primrose Chrome Yellow; Primrose Yellow; Pure Lemon Chrome L3GS; Sicomin® Yellow; Zwickau Yellow; Zwickauergelb;								
PY34:1	Lead Chromate with Lead sulfate	Chrome Lemon Yellow [ <a href="#">WNg</a> ]; C.I. Pigment Yellow 34:1; Lemon Chrome Yellow; Chrome Yellow Light; Pigment Yellow 34:1	77603:1	Lead Chromate with Lead sulfate	Very light, bright to deep yellow; †Fades	2	II	30	C	Contains lead; may darken by atmospheric hydrogen sulfide
PY35	Cadmium Yellow	Amarillo de cadmio; Aurora Yellow [ <a href="#">WNg</a> ]; Brilliant Yellow [ <a href="#">WN.g</a> ]; Cadmium Green light [ <a href="#">KA.o.p</a> ]; C.I. Pigment Yellow 35; C.P. Cadmium Yellow Dark [ <a href="#">GO.a.ag.ao</a>   <a href="#">SQ.a</a>   <a href="#">TA.a</a> .]; C.P. Cadmium Yellow Light [ <a href="#">GO.a.ag.ao</a>   <a href="#">SQ.a</a>   <a href="#">TA.a</a> .]; C.P. Cadmium Yellow Medium [ <a href="#">GO.a.ag.ao</a>   <a href="#">SQ.a</a>   <a href="#">TA.a</a> .]; C.P. Cadmium Yellow - Light / Medium / Dark [ <a href="#">GO.a.ag.ao</a>   <a href="#">SQ.a</a>   <a href="#">TA.a</a> .]; C.P. Cadmium Yellow Primrose [ <a href="#">GO.ag.ao</a> ]; Cadmium Lemon [ <a href="#">DB.o.w</a>   <a href="#">DV.k</a>   <a href="#">GB.o</a>   <a href="#">KA.o.p</a>   <a href="#">MA.o(artis)</a>   <a href="#">RT</a>   <a href="#">WN.a.g.k.o.w.wp</a> ]; Cadmium Lemon Pale [ <a href="#">WNg</a> ]; Cadmium Lemon Yellow [ <a href="#">SE.o.os.p.w</a>   <a href="#">SCH</a> ]; Cadmium Medium; Cadmium Orange [ <a href="#">MA.o</a> ]; Cadmium Pale; Cadmium Primrose [ <a href="#">RGH.o</a>   <a href="#">WNg</a> ]; Cadmium Yellow [GEN   AS   DS.od   <a href="#">DR.a.o.t.w</a>   <a href="#">HO.g.wo</a>   LK   <a href="#">MG.a.g.o.w</a>   <a href="#">MH.o</a>   Sl.p   <a href="#">SCH</a>   <a href="#">WN.o.w.wp</a> ]; Cadmium Yellow 1 Light [ <a href="#">SCHM.o</a> ]; Cadmium Yellow 2 Middle [ <a href="#">SCH.o(Mus)</a> ]; Cadmium Yellow Dark CP [ <a href="#">GO.a.ag.ao</a> ]; Cadmium Yellow Deep [ <a href="#">SE.o.os.p.t.w</a> ]; Cadmium Yellow Deep Genuine [ <a href="#">SE.p.t</a> ]; Cadmium Yellow Deep (hue) [ <a href="#">GR.o?</a> ]; Cadmium Yellow Dark / Deep [GEN   AS   <a href="#">CR.a</a>   <a href="#">DB.o</a>   <a href="#">DR</a>   LK   <a href="#">MA.a.o.o(artis).o.p.w</a>   <a href="#">MG.a.o.w</a>   <a href="#">MH.o</a>   <a href="#">SE.o.os.p.t.w</a>   Sl.p   <a href="#">WN.o.w.wp</a> .]; Cadmium Yellow Golden [ <a href="#">MH.o</a> ]; Cadmium Yellow Lemon [GEN   <a href="#">DB.o</a>   <a href="#">DV.w</a>   <a href="#">GR.w?</a>   <a href="#">HO.g.o.w.wo</a>   <a href="#">LB.o</a>   LK   <a href="#">MA.a.o.o(artis).o.p.w</a>   <a href="#">MH.o</a>   <a href="#">MR.o</a>   <a href="#">QH.a.o.w</a>   <a href="#">RGH.o</a>   <a href="#">RT.a.o.w.wo</a>   <a href="#">SCH.o.p.w</a>   <a href="#">SE.a.o</a>   Sl.p]; Cadmium Yellow Light (hue) [ <a href="#">GR.o?</a> ]; Cadmium Yellow Light [GEN   AS   <a href="#">BX.o</a>   <a href="#">CR.a(jo).ao.o</a>   <a href="#">DB.o.w</a>   DS.w   <a href="#">DV.a.k.o.w</a>   <a href="#">GB.o</a>   <a href="#">GR.w?</a>   <a href="#">HO.g.o.w.wo</a>   <a href="#">JQ.a</a>   <a href="#">KA.o.p</a>   <a href="#">LA.a</a>   <a href="#">LB.o</a>   LK   <a href="#">LQ.a</a>	77205	Inorganic; Cadmium Zinc Sulphide;  <a href="#">LBNL Pigment Database Spectral radiative properties; Cadmium Yellow Light</a>  How Cadmium yellow/red is made at <a href="#">webexhibits.org</a> ;  Some brands of cadmium paints may in fact be composed of Cadmium-Barium Pigments even if indicated on the label as pure PY35  <a href="#">(Reference: A Critical Analysis of Commercial Pigments, by M. Pérez, K. Castro, M.D. Rodríguez2, MA. Olazabal and J.M. Madariaga, University of the Basque Country, Dept. Analytical Chemistry and Dept. Painting).</a>  CAS 8048-07-5; CAS 12442-27-2	Bright, light, greenish to reddish yellow  †Fades, although light fast, may fade when exposed to very damp conditions and excessive light over a long time. <a href="#">(Ref: The Artist's Handbook by Pip Seymour)</a>	1	I  BWS 8:8:8 <a href="#">CR</a>	17-21	B	?* on the <a href="#">Grumbacher website</a> and on <a href="#">Dick Blicks site</a> . Grumbacher Cadmiums are indicated to be the cadmium colors that do not contain barium. However the Grumbacher web site also states they are "coprecipitated with barium sulfate", that would make them "Cadmium-Barium" versions of those cadmium colors and should have a :1 after the color index name. (ie. PO20 should be PO20:1). Older Grumbacher literature do indicate these are Cadmium-Barium colors.



		<p><a href="#">MA.a.o.o(artis).o.p.w</a>   <a href="#">MG.a.g.o.w</a>   <a href="#">MR.o</a>   <a href="#">MW.o</a>   <a href="#">QH.a.o.w</a>   <a href="#">RGH.o.p</a>   <a href="#">RT.a.o.o</a>   <a href="#">SE.a.o.os.p.w</a>   <a href="#">Sl.p</a>   <a href="#">SCH.a.g.o.p.w.</a>   <a href="#">SQ.a</a>   <a href="#">WN.a.a.k.w.wo</a>];</p> <p>Cadmium Yellow 1 Light [<a href="#">SCH.o(Mus)</a>];</p> <p>Cadmium Yellow Light CP [<a href="#">GO.a.ag.ao</a>   <a href="#">GU</a>];</p> <p>Cadmium Yellow Light Genuine [<a href="#">SE.t</a>];</p> <p>Cadmium Yellow Medium [GEN   <a href="#">BX.o.w</a>   <a href="#">CAS.k</a>   <a href="#">DB.o</a>   <a href="#">DSd</a>   <a href="#">DV.a.k.o.w</a>   <a href="#">JO.a</a>   <a href="#">KA.o</a>   <a href="#">LA.a</a>   <a href="#">LB.o</a>   <a href="#">LQ.a</a>   <a href="#">MA.a.o.o(artis).p</a>   <a href="#">MW.o</a>   <a href="#">QH.a.o.w</a>   <a href="#">RGH.o.p</a>   <a href="#">RT.a.o.o.w.wo</a>   <a href="#">SE.a.o.p</a>   <a href="#">Sl.p</a>   <a href="#">SCH.a</a>   <a href="#">SQ.a</a>   <a href="#">UT.w</a>   <a href="#">WN.a.a.k.</a>];</p> <p>Cadmium Yellow Medium (hue) [<a href="#">GR.o?*</a>];</p> <p>Cadmium Yellow Medium CP [<a href="#">GO.a.ag.ao</a>   <a href="#">GU</a>];</p> <p>Cadmium Yellow Medium Pure [<a href="#">UT.w</a>];</p> <p>Cadmium Yellow Mid [<a href="#">CR.a(fo.</a>   <a href="#">JO.a</a>];</p> <p>Cadmium Yellow Middle [<a href="#">HO.a</a>   <a href="#">SCH.w</a>];</p> <p>Cadmium Yellow Orange [<a href="#">SE.a</a>];</p> <p>Cadmium Yellow Pale [GEN   AS   <a href="#">BX.o.w</a>   <a href="#">DR.a.o.t.w</a>   <a href="#">DV.o</a>   <a href="#">HO.o.w</a>   <a href="#">WN.g.o.w.wp.</a>];</p> <p>Cadmium Yellow Pale (hue) [<a href="#">GR.o?*</a>];</p> <p>Cadmium Yellow Primrose [<a href="#">RGH.o.p</a>];</p> <p>Cadmium Yellow Primrose CP [<a href="#">GO.a.ag.ao</a>];</p> <p>Cadmium Zinc Yellow;</p> <p>Cad Yellow Light [MT];</p> <p>Cad Yellow Medium [MT];</p> <p>Deep Cadmium [<a href="#">WN</a>];</p> <p>Deep Cadmium Yellow [<a href="#">WN</a>];</p> <p>Giallo di cadmio;</p> <p>Jaune de Cadmium;</p> <p>Kadmiurngelb;</p> <p>Lemon Cadmium Yellow [<a href="#">PF.w</a>];</p> <p>Lemon Cadmium Yellow (Genuine) [CH];</p> <p>Lemon Intense Yellow [CH];</p> <p>Light Cadmium Yellow [<a href="#">PE.w</a>];</p> <p>Light Cadmium Yellow (Genuine) [CH   <a href="#">PF.w</a>];</p> <p>Medium Cadmium Yellow (Genuine) [CH];</p> <p>Pigment Yellow 35;</p> <p>True Cadmium Yellow Medium [<a href="#">PF.o</a>]</p> <p>True Cadmium Yellow Deep [<a href="#">PF.o</a>]</p> <p>True Lemon Cadmium Yellow [<a href="#">PE.o</a>]</p>									
PY35:1	Cadmium lithopone Yellow	<p>Cadmium-Barium Yellow Deep [<a href="#">GR.o.wo?</a> *];</p> <p>Cadmium-Barium Yellow Light [<a href="#">GR.o.wo?</a> *];</p> <p>Cadmium-Barium Yellow Medium [<a href="#">GR.o.wo?</a> *];</p> <p>Cadmium-Barium Yellow Pale [<a href="#">GR.o.wo?</a> *];</p> <p>Cadmium Litho Yellow Light [GU];</p> <p>Cadmium litho Yellow Lemon Xtra [GU];</p> <p>Cadmium Litho Yellow Medium [GU];</p> <p>Cadmium Litho Primrose 15G [GU];</p> <p>Cadmium yellow green LITHO (green shade);</p> <p>Cadmium Yellow (hue*) [DSd   <a href="#">HQ</a>];</p> <p>Cadmium Yellow Deep (hue*) [DSd];</p> <p>Cadmium Yellow Lemon (hue*) [<a href="#">GR.w?*</a>   <a href="#">HQ</a>];</p>	77205:1	<p>Inorganic; Cadmium Zinc co-precipitated with barium sulfide;</p> <p>CAS 90604-89-0</p>	<p>Bright, light, greenish to reddish yellow</p> <p>†Fades, although light fast, may fade when exposed to very damp conditions and excessive light over a long time. (Ref: <a href="#">The Artist's Handbook by Pip Seymour</a>)</p>	1	I	BWS 8;8:8 ( <a href="#">guerra paint</a> )	17-21	B	<p>* Cheaper, Slightly less saturated and slightly less tinting strength as pure PY35.</p> <p>It is overall a less costly pigment but some colormen make no distinction and charge the same as if it were PY35.</p> <p>Cadmium-Barium pigments can be up to almost 60% barium sulphate. (Ref: <a href="#">Painting Materials. A Short Encyclopedia. By Rutherford John Gettens. George Leslie Stout</a>)</p>

		<p>Cadmium Yellow Light (hue*) [CL   <a href="#">DB.a</a>   DG   DS.d   <a href="#">GB.o</a>   <a href="#">HQ</a>   <a href="#">SV</a>];</p> <p>Cadmium Yellow Medium (hue*) [CL   <a href="#">DB.a</a>   <a href="#">GR.a</a>];</p> <p>Cadmium Yellow Middle (hue*) [<a href="#">HQ</a>];</p> <p>Cadmium Yellow No. 2, very light [KP.p];</p> <p>Cadmium primrose 15G LITHO (green Shade) [GU];</p> <p>Cadmium Zinc lithopone;</p> <p>C.I. Pigment Yellow 35:1;</p> <p>Pigment Yellow 35:1</p>								<p>?* on the <a href="#">Grumbacher website</a> and on <a href="#">Dick Blicks site</a>. Grumbacher Cadmiums are indicated to be the cadmium colors that do not contain barium. However the Grumbacher web site also states they are "coprecipitated with barium sulfate", that would make them "Cadmium-Barium" versions of those cadmium colors and should have a :1 after the color index name. (ie. PO20 should be PO20:1). Older Grumbacher literature do indicate these are Cadmium-Barium colors.</p>	
PY36	Zinc Yellow	<p>Aenki;</p> <p>Amarillo de Zinc;</p> <p>Buttercup Yellow;</p> <p>C.I. Pigment Yellow 36;</p> <p>Citron Yellow;</p> <p>Giallo di Zinco;</p> <p>Jaune de Chrôme Malterve;</p> <p>Jaune de Zinc;</p> <p>Permanent Yellow;</p> <p>Pigment Yellow 36;</p> <p>Primrose Yellow,</p> <p>Ultramarine Yellow;</p> <p>Yellow Button Of Gold;</p> <p>Zinc Yellow [WN.od?];</p> <p>Zinc Chromate;</p> <p>Zinc Chrome;</p> <p>Zinc Chrome Yellow;</p> <p>Zinkgelb;</p>	77955	<p>Inorganic, synthetic mineral;</p> <p>Zinc chromate;</p> <p>zinc potassium chromate hydrate;</p> <p>Co-precipitated calcium and zinc chromates;</p> <p>CAS 37300-23-5</p>	Bright greenish yellow	2-3	I	40	B	<p>rust inhibitor</p> <p><a href="#">MSDS</a></p>	
PY36:1	Basic Zinc Yellow	<p>Basic Zinc Yellow;</p> <p>C.I. Pigment Yellow 36:1;</p> <p>Pigment Yellow 36:1;</p> <p>Zinc Yellow</p>	77956	<p>Inorganic;</p> <p>zinc chromate hydroxide;</p> <p>Zinc Tetroxychromate</p>	Dull reddish yellow	4	I	40	B	<p>rust inhibitor</p>	
PY37	Cadmium Yellow	<p>Aurora yellow;</p> <p>Cadmia;</p> <p>Cadmium gold dark CP (orange shade);</p> <p>Cadmium Gold Xtra Deep CP [GU];</p> <p>Cadmium Golden CP [GU];</p> <p>Cadmium Lemon [<a href="#">WL.o.p</a>];</p> <p>Cadmium Orange Deep [<a href="#">DV.k</a>];</p> <p>Cadmium Sulphide;</p> <p>Cadmium Yellow [GEN];</p> <p>Cadmium Yellow Deep [GEN   BR   <a href="#">CR.a.o.o</a>   DS.w   <a href="#">DV.k</a>   <a href="#">GB.o</a>   <a href="#">KA.o</a>   <a href="#">MA</a>   <a href="#">RF.e</a>   RGH.o.p   <a href="#">UT</a>   <a href="#">WL.o.p</a>];</p> <p>Cadmium Yellow Extra Deep [<a href="#">KA.p</a>   RGH.o   <a href="#">WL.o</a>];</p> <p>Cadmium Yellow Lemon [GEN   BR   <a href="#">HO.o.w</a>   <a href="#">MA</a>   <a href="#">UT.a.o</a>   <a href="#">WL.o</a>];</p> <p>Cadmium Yellow Lemon Pure [<a href="#">UT.a.o</a>];</p> <p>Cadmium Yellow Light [GEN   BR   <a href="#">HO.o.w</a></p>	77199	<p>Inorganic;</p> <p>Cadmium Sulphide;</p> <p>How Cadmium yellow/red is made at <a href="#">webexhibits.org</a>;</p> <p>Some brands of cadmium paints may in fact be made of Cadmium-Barium Pigments even if indicated on the label as pure PY37 (<a href="#">Reference: A Critical Analysis of Commercial Pigments, by M.</a></p>	<p>Bright lemon to medium to deep reddish yellow;</p> <p>Usually redder than PY35</p> <p>† Fades, may fade when exposed to very damp conditions and excessive light (<a href="#">Ref</a>)</p>	1	I	<p>BWS 8;8;8 (<a href="#">guerra paint</a>)</p>	17-21	B	<p>(<a href="#">Ref</a>);</p> <p>**According to the <a href="#">MSDS Sheet</a>, Utrecht Artists' Watercolor Paint "Cadmium Yellow Light Pure" is PY37. There is a typo on the website indicating it is PBk9, which can not be, because PBk9 is Pigment Black 9 or "Bone Black"</p> <p><a href="#">MSDS</a></p> <p><a href="#">ICSC</a></p>

		<p>  <a href="#">RF.e</a>   <a href="#">UT.a.o.w.*?</a>   <a href="#">WL.o.p</a>];</p> <p>Cadmium Yellow Light Pure [<a href="#">UT.o</a>];</p> <p>Cadmium Yellow Medium [GEN   BR   <a href="#">CR.ao.o.</a>   <a href="#">DV.k</a>   <a href="#">GB.o.p</a>   <a href="#">KA.p</a>   <a href="#">RF.e</a>   <a href="#">RGH.o</a>   <a href="#">UT.a.o</a>   <a href="#">WL.o.p</a>];</p> <p>Cadmium Yellow Medium Pure [<a href="#">UT.a.o.w.*?</a>];</p> <p>Cadmium Yellow Pale [GEN   <a href="#">HO.o.w</a>];</p> <p>Cadmolith;</p> <p>C.I. Pigment Yellow 37;</p> <p>Daffodil;</p> <p>Jaune Brilliant;</p> <p>Jaune de Cadmium;</p> <p>Kadmiumgelb;</p> <p>Orient Yellow;</p> <p>Permanent Lemon [<a href="#">WL.o</a>];</p> <p>Pigment Yellow 37;</p> <p>Radiant Yellow;</p>		<p><a href="#">Pérez, K. Castro, M.D. Rodríguez2, MA. Olazabal and J.M. Madariaga</a>, University of the Basque Country, Dept. Analytical Chemistry and Dept. Painting).</p> <p>CAS 68859-25-6</p>						
PY37:1	Cadmium-Barium Yellow Deep	<p>Cadmium Litho Gold Dark [GU];</p> <p>Cadmium Litho Golden [GU];</p> <p>Cadmium Lithopone Yellow;</p> <p>Cadmium-Barium Yellow Deep;</p> <p>Cadmium-Barium Yellow Light;</p> <p>Cadmium-Barium Yellow Medium;</p> <p>Cadmium Yellow Deep (hue*) [DSd];</p> <p>admium yellow gold (orange shade) (hue*);</p> <p>Cadmium Yellow Lithopone;</p> <p>Cadmium Yellow No. 4, light (hue*) [KP.p];</p> <p>Cadmium Yellow No. 6, medium (hue*) [KP.p];</p> <p>Cadmium Yellow No. 8, medium dark (hue*) [KP.p];</p> <p>Cadmium Yellow No. 9, dark (hue*) [KP.p];</p> <p>Cadmium yellow orange (orange shade);</p> <p>Cadmium yellow red (orange shade) (hue*);</p> <p>Cadmopone;</p> <p>Cadmopone Middle Yellow;</p> <p>C.I. Pigment Yellow 37:1;</p> <p>Pigment Yellow 37:1</p>	77199:1	<p>Inorganic;</p> <p>Cadmium co-precipitated with barium sulfide;</p> <p>CAS 90604-90-3</p>	<p>Bright lemon to medium to deep reddish yellow</p> <p>†Fades, may fade when exposed to very damp conditions and excessive light (<a href="#">Ref</a>)</p>	1	I	17-21	B	<p>* Cheaper, Slightly less saturated and slightly less tinting strength as pure PY37.</p> <p>It is overall a less costly pigment but some colormen make no distinction and charge the same as if it were PY37.</p> <p>Cadmium-Barium pigments can be up to almost 60% barium sulphate. (<a href="#">Ref: Painting Materials, A Short Encyclopedia, By Rutherford John Gettens, George Leslie Stout</a>)</p>
PY38	Tin Sulphide	<p>Artificial Gold;</p> <p>Aurum Mosatcum;</p> <p>Aurum Mosatcum;</p> <p>Aurum Mustcum;</p> <p>Aurum Mustvum;</p> <p>Bronze Powder**;</p> <p>C.I. Pigment Yellow 38;</p> <p>Cat's Gold;</p> <p>Faux Or;</p> <p>Herzenbergite;</p> <p>Mock gold;</p> <p>Mosaic Gold;</p> <p>Mosaic Gold Bronze Powder;</p> <p>Musiv Gold;</p> <p>Mustcum;</p> <p>Mustvum;</p> <p>Ormolu;</p> <p>Or Mussif;</p> <p>Oro Mosaico;</p> <p>Oro Musivo;</p>	77878	<p>Tin(IV) Sulfide Berndtite;</p> <p>Tin Sulphide (SnS2);</p> <p>Stannic sulfide;</p> <p>Stannous Sulfide;</p> <p>Tin Monosulfide;</p> <p>Tin (II) Sulfide;</p> <p>Tin Disulfide;</p> <p>Tin Protosulfide;</p> <p>Mosaic Gold (<a href="#">Ref: CAMEO Materials Database at Boston Fine Arts</a>);</p> <p>Stannic Sulfide (<a href="#">Ref: at Boston Fine Arts CAMEO</a>);</p> <p>Created by heating stannous chloride (100</p>	<p>greenish or brownish golden yellow metallic luster</p>	3	-	-	A	<p><a href="#">MSDS</a></p> <p>Mosaic Gold is reputed to be an aphrodisiac and it is an important ingredient in <a href="#">Ayurvedic</a> medicine against impotency. It is also used to "generate semen of high quality", gives great vigor and cures gonorrhoea. Also used as a brain tonic, anti-psychotic and last, but not least, it even clears your complexion! (<a href="#">wikipedia Reference</a>); (<a href="#">Ref chemeurope.com</a>);</p> <p>NOTE: The term "mosaic gold" is also used to designate an alloy consisting of 65.3% copper and 34.7% zinc.</p>

		Ouro musivo (Port.); Porporini; Purpurino; Purpurinus; Stannic Sulfide; Sulfanylidene-stannane; Suvarnavanga; Thioxostannane; Tin Bronze; Tin Disulfide; Tin Sulphide; Zinntetrasulfid;		parts) with flowers of sulfur (50) to obtain a pale yellow product (Ref Color Index 3rd Ed.)  Herzenbergite is the rare natural form  CAS 1314-95-0; CAS 1315-01-1						** Tin Sulphide is not bronze even though it is sometimes called "Browse powder" or "Tin bronze"
PY39	Orpiment	Arsenic Trisulfide; Arsenic Yellow; Auri pigmentum; Auripigment; Auripigmentum; Chinese Yellow; C.I. Pigment Yellow 39; Golden Orpiment; King's Yellow; Jalde; Juane Royal; Mineral Yellow; Natural Arsenic Sulfide; Old King's Yellow; Operment; Oropiment; Oropimente; Orpiment <sup>2</sup> [GEN   <a href="#">KP.p</a>   <a href="#">NP.p</a> ]; Orpimento; Pigment of Gold; Pigment Yellow 39; Royal Yellow; Sulfide of Arsenic; Yellow Arsenic	77085 77086	Sulfide of Arsenic; Arsenic Sulfide; Arsenic Trisulfide;  Arsenic pentasulfide, natural mineral ( <a href="#">Ref</a> <a href="#">webexhibits</a> ), ( <a href="#">Ref</a> );  Making pigments: Orpiment at <a href="#">webexhibits.org</a> ;  CAS 1303-33-9	Bright lemon to golden yellow	3-4***	II-III*	-	D** <a href="#">MSDS</a> <a href="#">MSDS<sup>2</sup></a>	Natural and artificial sources;  Said to be incompatible with lead or copper containing pigments ( <a href="#">Ref</a> );  May be wise to avoid mixing with paints containing lead ( <a href="#">Ref</a> )  May react with other pigments ( <a href="#">Ref</a> );  * Natural sources said to be more light fast ( <a href="#">Ref</a> );  ** Natural orpiment said to be less toxic ( <a href="#">Ref</a> ).  *** In it's natural crystal state it is very transparent, but transparency can vary do to binder medium (more transparent in oils), processing and particle size.
PY39	Realgar	Arsenic Orange; C.I. Pigment Yellow 39; realgar [GEN   <a href="#">KP.p</a>   <a href="#">NP.p</a> ]; Red orpiment	-	Arsenic sulfide, Natural mineral Realgar; CAS 1303-33-9	Yellow to Bright red orange	1	II-III*  †Hue shift towards yellow	-	D <a href="#">MSDS</a>	Said to be incompatible with lead or copper pigments. ( <a href="#">Pigment Ref</a> )  * Excessive light exposure may convert it to orpiment and arsenious oxide ( <a href="#">Ref</a> <a href="#">Natural Pigments</a> ; See <a href="#">Pararealgar</a> above
PY40	Aureoline	Aureolin [GEN   AS   <a href="#">BX.o</a>   <a href="#">DR.o.w</a>   <a href="#">GR.o</a>   <a href="#">HO.o</a>   <a href="#">MA.o(artis)</a>   <a href="#">MH.o</a>   <a href="#">RT.w</a>   <a href="#">SE.o.w</a>   <a href="#">UT.o</a>   <a href="#">WN.w.wp.</a> ]; Aureolina; Aureoline [ <a href="#">RT.w</a>   <a href="#">SE.o</a> ]; Aureolin (Cobalt Yellow) [ <a href="#">DR.w</a>   <a href="#">DS.o.w</a>   MH   <a href="#">UT.o</a> ]; Aureolin Yellow [MT]; C.I. Pigment Yellow 40; Cobalt (Aureolin) Yellow Lake [ <a href="#">QH.o.w</a> ]; Cobalt Yellow [KP.p   <a href="#">WL.o.p</a> ];	77357	Synthetic mineral; Potassium Cobaltinitrite;  Yellow crystalline compound salt of the metal Cobalt. It is the Double Nitrite of Cobalt and potassium. ( <a href="#">Ref Dictionary of</a> <a href="#">Artists' Oil</a> <a href="#">Pigments</a> : Their	Medium to dull golden yellow (Mustard yellow);  †Darkens, dulls, Hue shift towards brown	3-4	II	M	B <a href="#">MSDS</a> <a href="#">MSDS</a>	-

		<p>Cobalt Yellow (Aureolin) [DS.o.w   <a href="#">NP.p</a>   <a href="#">RF.e</a>   <a href="#">SI.p</a>   <a href="#">WL.o</a>];</p> <p>Cobalt Yellow Lake [<a href="#">QH.o</a>];</p> <p>Fischer's salt;</p> <p>Fragonard Aureoline [<a href="#">PF.o</a>];</p> <p>Indian Yellow (hue);</p> <p>Jaune de Cobalt;</p> <p>Jaune Indian Aureolin;</p> <p>Kobaltgelb;</p> <p>Pigment Yellow 40;</p> <p>Transparent Yellow [<a href="#">BX.o.w</a>]</p>		<p>Chemical and Physical Properties by R. Bruce Handlong, 1969);</p> <p>Aureolin (<a href="#">Ref at Boston Fine Arts CAMEO Database</a>);</p> <p>Making Cobalt Yellow Pigment at <a href="#">webexhibits.org</a></p> <p>CAS 13782-01-9</p>						
PY41	Naples Yellow	<p>Amarillo de Napoles;</p> <p>Amber Ochre [<a href="#">SE.o</a>];</p> <p>Antimoniate of Lead;</p> <p>Antimongelb;</p> <p>Antimony Yellow;</p> <p>Bindheimite**;</p> <p>Brilliant Yellow;</p> <p>C.I. Pigment Yellow 41;</p> <p>Genuine Naples Yellow;</p> <p>Genuine Naples Yellow Light [<a href="#">MH.o</a>];</p> <p>Genuine Naples Yellow Dark [<a href="#">MH.o</a>];</p> <p>Giallo di Napoli;</p> <p>Gialloline;</p> <p>Giallolino;</p> <p>Giallorino;</p> <p>Jaune Brilliant;</p> <p>Jaune d'Antimoine;</p> <p>Jaune de Naples;</p> <p>Lead Antimoniate;</p> <p>Lead Antimonate Yellow;</p> <p>Lead Antimonate Yellow Dark [<a href="#">NP.p</a><sup>1</sup>];</p> <p>Lead Antimony Yellow Pyrochlore;</p> <p>Luteolum Napolitanum;</p> <p>Merimee's Yellow;</p> <p>Mineralgelb;</p> <p>Mineral Yellow;</p> <p>Naples Yellow [GEN, BR   <a href="#">KP.p</a>   <a href="#">NP.p</a><sup>1</sup>   <a href="#">RGH.o</a>];</p> <p>Naples Yellow Light<sup>1</sup> [<a href="#">NP.p</a>];</p> <p>Naples Yellow Dark [KP.p   <a href="#">NP.p</a><sup>1</sup>];</p> <p>Naples Yellow Deep;</p> <p>Naples Yellow from Paris [KP.p];</p> <p>Naples Yellow Reddish [KP.p];</p> <p>Neapelgelb;</p> <p>Neapelgelb Zitron [KP.p];</p> <p>Pigment Yellow 41;</p> <p>Pyrochlore;</p> <p>Zalulino</p>	<p>77588</p> <p>77589</p>	<p>Inorganic;</p> <p>Lead Antimonate Yellow Pyrochlore, is obtained by calcining a mixture of Lead (II) Oxide and Antimony (V) Oxide to create a matrix of pyrochlore. It may include A12O3, CdO, Fe2O3, MgO, SnO2, TiO2, and/or ZnO as modifiers. (<a href="#">Ref Color Index</a>);</p> <p>Lead Antimoniate;</p> <p>Lead metantimonate;</p> <p>Lead antimonate yellow</p> <p>(<a href="#">Ref Boston Fine Arts</a>);</p> <p><b>ARTIFICIAL YELLOW PIGMENTS</b>, A study of lead, tin and antimony based yellow pigments <a href="#">PDF</a>.</p> <p>Article: <a href="#">EARLY PRODUCTION RECIPES OF LEAD-ANTIMONATE YELLOW IN ITALIAN ART</a>, Chapter 2 of "Scientific analysis of historical paint and the implications for art history and art conservation. The case studies of Naples yellow and discolored smalt." by J. Dik, ©2003. It is not permitted to download or to forward/distribute the text or part of it without the</p>	<p>Many shades pale to bright, greenish to red yellow</p>	1	I	10-15	<p>C</p> <p><a href="#">MSDS</a><sup>1</sup></p> <p><a href="#">MSDS</a></p>	<p>Unique hue;</p> <p>Contains lead;</p> <p>May darken by atmospheric hydrogen sulfide;</p> <p>More stable in oils?; (<a href="#">Ref and Source</a>);</p> <p>"When it comes into contact with a metallic iron or tin or zinc, Naples Yellow becomes gray. It is advisable to use a horn or wooden spatula* in preparing and/or mixing the pigment" (<a href="#">Ref Dictionary of Artists' Oil Pigments p.52</a>)</p> <p>* certainly any nonmetallic tools such as a glass muller may be used too.</p> <p>Usually substituted with less toxic pigments and mixtures in modern paints, genuine Naples Yellow is still available from some suppliers, (see <a href="#">links in the marketing &amp; common names column</a>).</p>

				<p>consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use.</p> <p>How Naples Yellow is made at <a href="http://webexhibits.org">webexhibits.org</a></p> <p>** Occurs naturally as Bindheimite (hydrous antimonate of lead), (<a href="#">ask.com Ref</a>), (<a href="#">images</a>), (<a href="#">webmineral.com Ref</a>);</p> <p>CPMA 10-14-4</p> <p>CAS 8012-00-8; CAS 13510-89-9</p>					
PY42	Yellow Iron Oxide	<p>Antique Dandelion; Antique Brown; Attish Light Ochre [<a href="#">SCH.o(Mus)</a>]; Bohemian Ochre Dark; C.I. Pigment Yellow 42; Deep Gold Oxide [<a href="#">KA.p</a>]; Dry Ochre [<a href="#">MA.o(HD)</a>]; Felsite Transparent Yellow [<a href="#">KA.p</a>]; Ferrite Yellow [<a href="#">SCH.a.p</a>]; Goethite; Golden Ochre [<a href="#">LB.o</a>   <a href="#">MR.o</a>   <a href="#">SV</a>]; Gold Ochre [<a href="#">RT.o</a>   <a href="#">WN.a.o.w.wp</a>]; Gold Ochre Transparent [<a href="#">DV.a</a>]; Gold Oxide [<a href="#">CR.a(jo)</a>   <a href="#">JO.a</a>]; Indian Yellow Transparent (hue) [<a href="#">DV.a.o</a>]; Iron Oxide Yellow [<a href="#">CAS.k</a>   KP.p   <a href="#">SCH.a</a>]; Light Brown [RT]; Light Ochre [<a href="#">SCH.a</a>]; Limonite; Jaune de Fer; Mars Orange [GEN   <a href="#">KA.p</a>   <a href="#">MA.o</a>   <a href="#">RGH.o.p</a>   <a href="#">WL.o</a>]; Mars Yellow [GEN   <a href="#">BX.o</a>   DS.w   <a href="#">LB.o</a>   <a href="#">MA.o.o(artis).p</a>   <a href="#">OH.a.o.w</a>   <a href="#">SE.os</a>   Sl.p   <a href="#">UT.o</a>   <a href="#">WN</a>]; Mars Yellow Dark [Sl.p]; Mars Yellow Deep [<a href="#">RF.e</a>   <a href="#">RGH.o.p</a>   <a href="#">WL.o.p</a>]; Mars Yellow Light [<a href="#">RF.e</a>   <a href="#">RGH.o.p</a>   <a href="#">WL.o.p</a>]; Mars Yellow Orange [<a href="#">BX.o</a>]; Opaque Yellow Ochre [<a href="#">HO.af.</a>]; Orange Ochre [<a href="#">RT.o</a>]; Orange Oxide [GU]; Orange Oxide Transparent [RGH.o]; Oxide Yellow [<a href="#">LA.a</a>]; Oxyde Juane; Pigment Yellow 42;</p>	77492	<p>Synthetic hydrated ferric oxide; Iron (III) oxide monohydrate; Hydrated Iron Oxide;</p> <p><a href="#">LBNL Pigment Database Spectral radiative properties</a>; <a href="#">Yellow Oxide</a>;</p> <p>Making pigments: How to make Yellow ochre at <a href="http://webexhibits.org">webexhibits.org</a>;</p> <p><math>\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}</math></p> <p>CAS 51274-00-1</p>	Dull Reddish yellow to yellowish orange brown**	1-4*	I BWS 8;8;8 ( <a href="#">CR</a> ) BWS 8;8;8 ( <a href="#">guerra paint</a> )	20-30*	<p>A*** <a href="#">MSDS</a> <a href="#">MSDS</a> <a href="#">MSDS</a></p> <p>* Color, transparency and oil absorption can vary widely depending on manufacture variables, iron oxide (red) to hydrated iron oxide (yellow) ratios, particle size, impurities, additives, and fillers. (<a href="#">Ref</a> Fine Arts Boston).;</p> <p>**Oil paints and watercolors using PY42 and PY43 exist in almost any shade of yellow, orange, red and violet brown to green brown.</p> <p>***May have small amounts of manganese</p>

Raw Sienna [[DR.t](#) | [HO.o](#) | [RT.a.a](#) | [SCH](#)];  
 Raw Sienna Deep [[DV.w](#)];  
 Raw Sienna Hue [AS];  
 Spanish Gold Ochre [[KA.o.p](#)];  
 Stil De Grain (hue) [[WL.o](#)];  
 Translucent Ochre [[SCH.o](#)];  
 Translucent Yellow Oxide [[SCH.o\(Mus\)](#)];  
 Trans. Gold Oxide [SQ.a];  
 Transoxide Yellow [[LA.a](#)];  
 Transparent Earth Yellow [DS | [GB.o.p](#)];  
 Transparent Mars Yellow [[BX.o.w](#) | [MA.o](#) | SQ.a];  
 Transparent Oxide Yellow [[CAS.k](#) | [KA.o](#) | [MH.o](#) | [OH.a](#) | [RT.a.o.w.wo](#)];  
 Transparent Oxide Yellow Lake [[OH.o.w](#)];  
 Transparent Raw Sienna [[LQ.a](#)];  
 Transparent Yellow Iron Oxide [DV.a | [GO.a.af.ao](#) | [GR.o](#)];  
 Transparent Yellow Ochre [[LB.o](#)];  
 Transparent Yellow Oxide [BR | DS.o.w | [GO.ab](#) | [KA.ad.p](#) | [MG.a.o.w](#) | SQ.a | [TA.a.af](#)];  
 Venetian Yellow Orange [[PF.o](#)];  
 Yellow 920 [EP.p];  
 Yellow Gold [GU];  
 Yellow Iron Oxide [[WN.a](#)];  
 Yellow Ochre [GEN | AS | [BX.o.w](#) | BR | CL | [CR.a\(jo\).ao.o](#) | [DB](#) | [DR.a.a.a\(s3hb\).a\(s3mb\).o\(georg\).DR.o.w.w.t](#) | DS.o | [DV.a.af.w](#) | [HO.a.ag.HO.a\(gesso\).o.o.w.wo](#) | KA | [LB.av.o](#) | LK | [MA.a.a.g.w.w](#) | [MH.o](#) | [MR.o](#) | [MW.wo](#) | [PF.o.o.w](#) | [RT.a.a.o.o](#) | [SCH.w](#) | [SE.a.os.w](#) | [UT.a.w](#) | [WN.a.a.g.w.wo](#)];  
 Yellow Ochre Deep [[MH.o](#)];  
 Yellow Ochre Hue [[GR.w](#)];  
 Yellow Ochre Light [DS.o.w | LK];  
 Yellow Ochre Light Hue [[GR.a](#)];  
 Yellow Ochre Pale [[MA.o\(artis\)](#) | [WN.o](#)];  
 Yellow Oxide [[CR.a\(jo\).a](#) | [DB.a.a.ag](#) | [GO.a.ab.af.ag.ao](#) | [JQ.a](#) | [LQ.a](#) | MT | SQ.a | [TA.a.af](#)];  
 Yellow Oxide Dark [GU];  
 Yellow Oxide Light [GU];  
 Yellow Oxide Transparent [RGH.o.p];

*There are many other names for ochres and yellow hydrated iron oxides, usually based on color hue, production location or manufacturing method, followed or prefixed by other properties such as raw, burnt or transparent etc. There are also many different traditional spellings of the word Ochre, Ocher, Ocre, Oker, Oaker, etc. There are also variances on the words oxide (Oxyde, oxid, etc.), Iron (di ferro, de fer, mars, Ferric, ferrous, etc.) and yellow (amarillo, juane, geel, gelb, lemon, citron, mustard, etc.). The yellow iron oxide pigments have an ancient history and because pigments often still use the traditional name, a multitude of languages have intermixed and the different names have become an almost impossible list of varied phrases.*

PY43	Natural Yellow Iron Oxide	African Ocher; Amberg Yellow [KP.p]; Aureolin (hue); Blue Ridge Yellow Ocher [ <a href="#">NP.p</a> ];	77492	Natural hydrated ferric oxide usually with some impurities; Mixed iron	Dull Reddish yellow to yellowish orange brown**	2-4***	I BWS 8;8;8 <a href="#">(guerra paint)</a>	15-25***	A**** <a href="#">MSDS</a>	* A few companies use mixtures of PY42 and PY 43, but since they are essentially the same chemically
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Brown Hematite;  
 Brown Ochre [[KA.p](#) | [KP.p](#) | [NP.p](#)];  
 Buckskin Brown Ochre [[SI.p](#)];  
 Burgundy Yellow Ochre [[DS.o.w](#) | [KP.p](#)];  
 Burnt Yellow Ochre [[DS.w](#)];  
 Calcined Ochre de Rue;  
 Chamois;  
 Chinese yellow;  
 C.I. Pigment Yellow 43;  
 Colonial Raw Sienna [[EP.p](#)];  
 Colonial Yellow Ocher [[EP.p](#)];  
 Cyprusite;  
 Dark Ochre [[KP.p](#)];  
 Dark Yellow Ocher [[EP.p](#)];  
 Dunkel Ocher [[EP.p](#)];  
 English Ochre;  
 Fawn Ochre [[KP.p](#) | [SI.p](#)];  
 Flesh Ochre;  
 French Natural Yellow Iron Oxide [[NP.p](#)];  
 French Ochre [[DS.w](#) | [KP.p.p](#)];  
 French Orange (Havane) Ocher [[NP.p](#)];  
 Gilding Bole [[KP.p](#)];  
 Goethite;  
 Goethite - Brown Ochre [[DS.w](#)];  
 Gold Ochre [[HO.o](#) | [KP.p](#) | [NP.p](#) | [OH.o.w](#) | [RT.w](#) | [SCH.p](#)];  
 Golden Ochre [[MA.o.o\(artis\).p](#) | [RGH.o](#)];  
 Golden Yellow Ochre [[SI.p](#)];  
 Havana Ocher [[EP.p](#)];  
 Iron Oxide Yellow [[KP.p](#)];  
 Iron Yellow;  
 Italian Brown Ochre [[NP.p](#)];  
 Italian Dark Ochre [[NP.p](#)];  
 Italian Deep Ochre [[DS.w](#)];  
 Italian Earth [[HO.o](#)];  
 Italian Gold Ochre light [[KP.p](#)];  
 Italian Lemon Ochre [[WL.p](#)];  
 Italian Ochre [[MA.p](#)];  
 Italian Orange Ochre [[WL.p](#)];  
 Italian Raw Sienna [[WL.o.p](#)];  
 Italian Yellow Earth [[NP.p](#)];  
 Italian Yellow Ochre [[WL.o.p](#)];  
 Jaune Claire [[NP.p](#)];  
 Jaune Foncé [[NP.p](#)];  
 Lemon Ocher [[NP.p](#) | [RGH.o](#) | [WL.o.p](#)];  
 Light Yellow Ocher [[EP.p](#)];  
 Limonite [[NP.p](#)];  
 Lymnite;  
 Mars Orange [[RGH.o](#)];  
 Mineral Yellow;  
 Minette;  
 Nicosia Yellow Ocher [[NP.p](#)];  
 Native Earth [[HO.o](#)];  
 Natural Burnt Ochre [[CAS.k](#)];  
 Natural Gold Ochre [[DV.o](#)];  
 Natural Sienna [[EP.p](#)];  
 Natural Yellow [[EP.p](#)];  
 Natural Yellow Iron Oxide [[NP.p](#)];

oxides;  
 Hydrated Iron Oxide;  
  
 $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$   
  
 CAS 64294-91-3

it's virtually a single pigment, and was probably done to get a more consistent color from tube to tube.

\*\* Oil paints and watercolors using PY42 and PY43 exist in almost any shade of yellow, orange, red and violet brown to green brown.

\*\*\* Color, transparency and oil absorption in artist earth pigments can vary widely depending on iron oxide to hydrated iron oxide ratios, clay content, particle size, impurities, additives, fillers, and other mineral content. ([Ref: Natural Earth Pigments CAMEO Database at MFA, Boston](#)); ([Ref: Yellow Ochre CAMEO Database at MFA, Boston](#)).

\*\*\*\* Natural product may have small amounts of manganese or other trace minerals.



Natural Yellow Ochre [DS.o.w];  
 Natural Yellow Oxide [[NP.p](#)];  
 Ocher;  
 Ochre;  
 Ochre Avana [KP.p];  
 Ochre de Rue;  
 Ochre of Athens;  
 Ocre Havane  
 Ocre Juane Claire;  
 Ocre Juane Fonce;  
 Orange [[RT](#)];  
 Orange Earth from Herculaneum [[MA.o](#)];  
 Orange Ochre [[NP.p](#) | [WL.o](#)];  
 Oxford Ochre;  
 Oxyde Juane Naturelle;  
 Pigment Yellow 43;  
 Prussian Ochre;  
 Raw light Ochre [[SCH.o\\*](#)];  
 Raw Sienna [GEN | CL | [GO.a.ab.af.ag.ao](#)  
 | GU | [HO.a.g.o.w.wo](#) | KP.p | MT | [RT.o.w](#)  
 | [SV](#) | [SH.w](#) | [WN.k](#)];  
 Raw Sienna brownish, Italy [KP.p];  
 Raw Sienna Deep [[QH.o](#)];  
 Raw Sienna, Italy [KP.p];  
 Raw Sienna Light [GU | [OH.o](#)];  
 Raw Sienna Medium [GU];  
 Red Ochre [[MA.o](#)];  
 Roman Ochre;  
 Roman Ochre Deep Greenish Hue[SI.p];  
 Satin Ochre [KP.p];  
 Sienne naturelle;  
 Sil;  
 Spanish Gold Ochre [KA];  
 Spruce Ochre;  
 Spruce Oker;  
 Stil de Grain (hue) [[WL.o.p](#)];  
 Taunus Ochre light [KP.p];  
 Terra Giallo;  
 Terre Jaune;  
 Transparent Gold Ochre;  
 Verona Gold Ochre [DS.o.w];  
 Xanthosiderite;  
 Yellow Earth;  
 Yellow Earth from Rome [[MA.o](#)];  
 Yellow Earth from Verona [[MA.o](#)];  
 Yellow Haematite;  
 Yellow Hematite;  
 Yellow iron oxide;  
 Yellow Moroccan Ochre [KP.p];  
 Yellow Mine Ochre [KP.p];  
 Yellow Ocher;  
 Yellow Ocher Dark [[NP.p](#)];  
 Yellow Ochre [GEN | [CAS.k](#) | [DB.o](#) | [DR.o](#) |  
 DS.a.i.w | [DV.k.o.w](#) | [GB.o.o.p](#) |  
[GO.a.ab.af.ag.ao](#) | GU | [HO.o](#) | [KA.ad.o.p](#)  
 | [LA.a](#) | [MA.o.o\(artis\).p](#) | [MG.a.g.o](#) | [MW.o](#)  
 | RGH.o.p | [ROSS.o.o\(soft\)](#) | [SCH.p](#) |  
[SE.p.t](#) | SI.p | [UT.o\\*](#) |  
[WN.k.a.o.w.wp.wp\(L\)](#)];  
 Yellow Ochre Brownish Deep [SI.p];  
 Yellow Ochre Burnt [[QH.o.w](#)];

		<p>Yellow Ochre Half Burnt [<a href="#">OH.o.w</a>];</p> <p>Yellow Ochre Domestic [<a href="#">WL.o.p</a>];</p> <p>Yellow Ochre Burnt [<a href="#">OH.o.w</a>];</p> <p>Yellow Ochre Deep [<a href="#">OH.o.w</a>];</p> <p>Yellow Ochre Half Burnt [<a href="#">OH.o.w</a>];</p> <p>Yellow Ochre Golden Shade [Sl.p];</p> <p>Yellow Ochre Light [ <a href="#">KA.p</a>   <a href="#">LB.o</a>   <a href="#">MA.o.p</a>   <a href="#">NP.p</a>   <a href="#">OH.a.o.w</a>   <a href="#">WN.o.w</a>];</p> <p>Yellow Ochre Natural [<a href="#">HO.o.wo</a>];</p> <p>Yellow Ochre Pale [<a href="#">HO.o</a>];</p> <p>Yellow Ochre Pale Natural [<a href="#">HO.o</a>];</p> <p>Yellow Oker;</p> <p>Yellow Oxide;</p> <p>Yellow Oxide of Iron;</p> <p><i>There are many other names for ochres and yellow hydrated iron oxides, usually based on color hue, production location, mining site, or manufacturing method, followed or prefixed by other properties such as raw, burnt or transparent etc. There are also many different traditional spellings of the word Ochre, Ocher, Ocre, Oker, Oaker, etc. There are also variances on the words oxide (Oxyde, oxid, etc.), Iron (di ferro, de fer, mars, Ferric, ferrous, etc.) and yellow (amarillo, juane, geel, gelb, lemon, citron, mustard, etc.). The yellow iron oxide pigments have an ancient history and because pigments often still use the traditional name, a multitude of languages have intermixed becoming an almost impossible list of varied phrases.</i></p>								
PY44	Basic cadmium chromate	<p>Basic Cadmium Chromate;</p> <p>C.I. Pigment Yellow 44;</p> <p>Cadmium Chrome;</p> <p>Cadmium Chromate;</p> <p>Chromate of Cadmium;</p> <p>Pigment Yellow 44;</p> <p>Thwaites yellow</p>	77188	Basic cadmium chromate	vivid light yellow	1	-	-	-	"described by Kühn and Curran (1986) as a rare and expensive yellow pigment" ( <a href="#">Pigment Compendium Ref</a> )
PY45	Iron Chromate	<p>C.I. Pigment Yellow 45;</p> <p>Iron Chromate</p>	77505	Iron chromates of varying composition, basic ferric chromate, ferric dichromate.	-	-	-	-	-	-
PY46	Massicot Litharge	<p>Bleigelb;</p> <p>Bleiglätte;</p> <p>Cassel Yellow;</p> <p>Chrysitin;</p> <p>C.I. Pigment Yellow 46;</p> <p>Giallorino;</p> <p>King Yellow;</p> <p>Lead(II) oxide;</p> <p>Lead Monoxide;</p> <p>Lead Ocher;</p> <p>Lead Oxide;</p> <p>Lead oxide yellow;</p> <p>Lead Protoxide;</p> <p>Litharge [<a href="#">KA.p</a>   <a href="#">NP.p</a>];</p> <p>Litharge yellow;</p> <p>Massicot [<a href="#">NP.p</a>];</p> <p>Masicotite [KP.p];</p> <p>Plumbous oxide;</p>	77577	<p>Lead Oxide;</p> <p>Lead Monoxide;</p> <p>Alpha Lead Monoxide;</p> <p>Red form (Litharge) has a <a href="#">tetragonal crystal structure</a>; Yellow (Massicot) form has a <a href="#">orthorhombic crystal structure</a>. Both forms occur naturally.; (<a href="#">Ref</a>):</p> <p>PY 46 type 1: Lead Stannate (Pb SnO4);</p> <p>PY 46 Type 2: Lead and Tin Oxides</p> <p>(<a href="#">Ref Color Index 3rd Ed.</a>)</p>	Massicot- Yellowish; Litharge- reddish orange	1	II	NA	C <a href="#">MSDS</a> <a href="#">MSDS</a>	Too siccativ in oil to use as a pigment, but can be used to make siccativ mediums and drying oils.

		Pigment Yellow 46; Silver Slip; Yellow lead monoxide		CAS 1317-36-8						
PY47	Lead Titanate	C.I. Pigment Yellow 47; Lead Titanate; Lead Titanium Oxide; Pigment Yellow 47	77645	Inorganic; Lead Titanate; Lead(II) titanate; Lead titanium oxide; <a href="#">(Chemical Ref)</a> ;  CAS 12060-00-3	Pale yellow	-	-	-	C <a href="#">MSDS</a>	"Commonly used in the Netherlands as a primer and in architectural finishes. Minor use in USA. First mentioned in the literature in 1936" ( <a href="#">Ref Paint film components monograph - Australia</a> );
PY48	Lead Cyanamide	C.I. Pigment Yellow 48; Cianuro de plomo; Cyanure de plomb; Dicyanolead; Lead Cyanamide; Lead Cyanate; Lead Cyanide; Pigment Yellow 48	77610	Lead Cyanamide; Lead Cyanide; Lead Cyanate; Lead dicyanide; Lead(II)cyanide; <a href="#">(Ref Chemical)</a> ;  Lead Cyanide, Lead Cyanate; CAS 592-05-2; Lead Cyanamide: CAS 20837-86-9	Bright Greenish yellow	-	-	-	D	According to the Color Index (1997) Lead cyanamide is PY48, Other sources indicate that Lead Cyanide is PY 48 ( <a href="#">Ref</a> ). They appear to be different chemicals with different CAS numbers.; Poisonous; Anticorrosive Paint; decomposed by acids to give off hydrogen cyanide
PY53	Nickel Antimony Titanium Yellow Rutile	Antimony Nickel Titanium Oxide Yellow; C.I. Pigment Yellow 53; Juane Citron; Lemon Yellow [EP.p   <a href="#">w.wp.</a> ]; Lemon Yellow Hue [ <a href="#">WN.o</a> ]; Lemon Yellow (Nickel Titanate) [ <a href="#">WN.w.w</a> ]; Meteor® Bright Yellow 8320; Naples Yellow (hue) [ <a href="#">LA.a</a>   <a href="#">MA.p</a> ]; Naples yellow Light (hue) [ <a href="#">KA.o</a> ]; Naples Yellow Light (imitation) [ <a href="#">KA.o.p</a> ]; Nickel Antimony Titanate; Nickel Antimony Titanium Yellow Rutile; Nickel Rutile Yellow; Nickel Titanate; Nickel Titanate Yellow [GEN   <a href="#">DR.w</a>   DS.a.o.w   <a href="#">DV.w</a>   <a href="#">GR.wo</a>   GU   <a href="#">MA.o.o(artis).p.w</a>   <a href="#">RT.a</a> ]; Nickel Titanium [ <a href="#">QH.a.o.w</a> ]; Nickel Titanium Oxide; Nickel Titanium Yellow [KP.p   <a href="#">QH.a.o.w</a>   Sl.p   <a href="#">WN.d</a> ]; Nickel Yellow [GEN   <a href="#">BX.o</a>   <a href="#">CAS.k</a>   <a href="#">KA.o.p</a>   <a href="#">SE.o.p</a>   <a href="#">WL.o.p</a> ]; Nickle Yellow Titanium [ <a href="#">SCH.p</a> ]; Nickel Yellow Titanium Rutile; Pigment Yellow 53; Praseodym Titanium Yellow; Shepherd Yellow; Sunflower Yellow; Titanate Yellow [ <a href="#">GO.a.af.ag</a> ]; Titanium Nickel Yellow [ <a href="#">MA.o(artis).p</a> ]; Titanium Yellow [ <a href="#">GO.a</a>   RGH.o.p   <a href="#">SCH.w</a> ]; Vasari Yellow [ <a href="#">MA.o(Ren)</a> ]; Vesuvius Yellow [ <a href="#">MA.o(Med)</a> ];	77788	Inorganic; Nickel Antimony Titanium Rutile; Nickel Titanate (Ti,Ni,Sb) Oxides; A group of synthetic mineral pigments ( <a href="#">Ref: The Artist's Handbook by Pip Seymour</a> );  Antimony oxide-nickel oxide-titanium oxide is created by calcining antimony oxide, nickel oxide and titanium oxide together at high temperature, the composition may include CdO, Cr2O3, or Li2O as modifiers;  C.I. Pigment yellow 53 is a solid, complex inorganic colored pigment, based on titanium dioxide with nickel (II) and antimony (V) ions partially replacing titanium ions in the rutile lattice. It is practically inert and has a melting point above 1000 °C. ( <a href="#">Reference SIDS document 8007189.pdf</a> );	Pale, light greenish lemon yellow; †Becomes more opaque	1-3*	I BWS 8;8;8 <a href="#">(guerra paint)</a>	15*	A <a href="#">MSDS</a> <a href="#">MSDS</a> <a href="#">SIDS</a>	* Opacity and oil absorption depends on composition  A good less toxic Naples Yellow substitute  "Nickel Titanium Yellow is one of the cleanest and brightest of the inorganic pigments. It has a low tinting strength and average to slow drying time." ( <a href="#">Ref: Dick Blick pigment info</a> );

				Mixed Metal Oxide (MMO) ( <a href="#">PCImag Ref</a> );  <a href="#">LBNL Pigment Database Spectral radiative properties</a> ; <a href="#">Nickel Antimony Titanium Yellow Rutile (ii)</a> ; <a href="#">Nickel Antimony Titanium Yellow Rutile (iii)</a> ; <a href="#">Nickel Titanate Yellow</a> ;  (Ti,Ni,Sb)O <sub>2</sub>  CPMA 11-15-4  CAS 8007-18-9							
PY55	Diarylide Yellow AAPT	Benzidine AAPT; Benzidine Yellow AAPT; C.I. Pigment Yellow 55; Diarylide Yellow [ <a href="#">WNd</a> ]; Diarylide Yellow AAPT; Diarylide Yellow PT; Pigment Yellow 55; Pigment Yellow 2RN; Yellow Deep	21096	Disazo;  CAS 6358-37-8	Slightly dull reddish yellow	-	III	45	B	-	
PY61	Pigment Yellow 61	C.I. Pigment Yellow 61; Heuco Yellow 106100; Pigment Yellow 61; Suimei Lake Fast Yellow ALA	13880	Monoazo; CAS 12286-65-6	Greenish yellow	Pale reddish yellow	II	62	A	-	
PY62	Pigment Yellow 62	Azo Yellow 62; C.I. Pigment Yellow 62; Heuco Yellow 106200; Irgalite Yellow; Pigment Yellow 62	13940	Monoazo; CAS 12286-66-7	Light bright mid-shade yellow	Deep reddish yellow	II	48-62	A	-	
PY62:1	Pigment Yellow 62:1	C.I. Pigment Yellow 62:1; Engeltone Yellow; Monoarylide Yellow Lake; Pigment Yellow 62:1	13940:1	Monoazo	mid-shade yellow	-	-	-	A	-	
PY63	Suimei Yellow 3G	C.I. Pigment Yellow 63; Pigment Yellow 63; Pigment Yellow 121; Suimei Yellow 3G	21091	Disazo; CAS 14569-54-1	Greenish yellow	-	III	-	A	Same as PY121 ( <a href="#">Ref</a> )?	
PY65	Hansa yellow 65	Arylide Yellow RN; Arylide Yellow Deep [ <a href="#">DV.o.w</a>   <a href="#">SQ.a</a>   <a href="#">TA.a.af</a> ]; Arylamide Yellow Deep [ <a href="#">CR</a> ]; Azo Yellow Deep [ <a href="#">WN.a</a> ]; Brilliant Yellow; Cadmium Yellow Hue [LK   <a href="#">WN.wo</a> ]; Cadmium Yellow Deep (hue); Cadmium Yellow Deep Hue [ <a href="#">WN.a</a> ]; Cadmium Yellow Orange Hue [ <a href="#">PE</a> ]; Chrome Yellow Deep Hue [ <a href="#">LB.o</a>   <a href="#">PE.o</a>	11740	Mono azo; Arylide; Arylamide; CAS 6528-34-3	Bright, light, highly saturated, Deep reddish yellow	3	I BWS 7-8;7:6-7 ( <a href="#">guerra paint</a> )	30-40	A	* Due to it's Lower cost and superior durability, PY65 has largely replaced PY75 for traffic paints ( <a href="#">Ref at Paint &amp; Coatings Industry Magazine, article "Evaluation of Various Organic Color Pigments" January 1, 2010</a> ).  **According to the <a href="#">MSDS Sheet, Utrecht</a>	

		<p><a href="#">WN.a</a>];</p> <p>Chrome Yellow Deep (hue) [<a href="#">SCH.w</a>];</p> <p>Chrome Yellow Deep, no lead [<a href="#">SCH.w</a>];</p> <p>C.I. Pigment Yellow 65;</p> <p>Deep French Yellow [CH];</p> <p>Diarylide Yellow [<a href="#">GR.o</a>   <a href="#">KA.ad</a>];</p> <p>Gamboge (hue) [<a href="#">BX.w</a>];</p> <p>Gold Yellow [<a href="#">LB.av.o</a>];</p> <p>Golden Arylide [GU];</p> <p>Hansa Yellow;</p> <p>Hansa Yellow Deep [GEN   DS.a.i.o.w   <a href="#">DV.w</a>   <a href="#">UT.w**</a>];</p> <p>Indian Yellow (hue) [LK];</p> <p>Indian Yellow Hue [<a href="#">GR.w</a>];</p> <p>Monolite Yellow;</p> <p>Permanent Dark Yellow [<a href="#">PE.w</a>];</p> <p>PERMANENT YELLOW 65;</p> <p>Permanent Yellow Deep [LK   <a href="#">WL.o.p</a>];</p> <p>Pigment Yellow 65;</p> <p>Sahara Yellow [<a href="#">LB.o</a>];</p> <p>Traffic Yellow*];</p> <p>Winsor Yellow Deep [<a href="#">WN.o.w.wp.</a>]</p>								Artists' Watercolor Paint " <a href="#">Hansa Yellow Deep</a> " is PY65. There is a typo on the website indicating it is PBk9, which can not be, because PBk9 is Pigment Black 9 or "Bone Black"
PY73	Arylide Yellow GX	<p>Arylide Yellow GX;</p> <p>Azo Yellow;</p> <p>Azo Yellow Medium [<a href="#">UT.a</a>];</p> <p>Cadmium Yellow Hue [<a href="#">DR.o</a>   <a href="#">UT</a>];</p> <p>Cadmium Yellow Light Hue [<a href="#">DV</a>];</p> <p>Cadmium Yellow Medium Hue [<a href="#">LB.o</a>   <a href="#">WN.a</a>];</p> <p>Cadmium Yellow Hue (Primary Yellow) [<a href="#">DR.o</a>];</p> <p>Chrome Yellow Hue [<a href="#">DR</a>];</p> <p>C.I. Pigment Yellow 73;</p> <p>Hansa Yellow GX;</p> <p>Hansa Yellow Light [<a href="#">UT.a</a>];</p> <p>Hansa Yellow Medium [<a href="#">DV.a.af</a>   <a href="#">GO.a.ab.af.ag.ao</a>];</p> <p>Pigment Yellow 73;</p> <p>Spectrum Yellow [<a href="#">DR</a>];</p> <p>Transparent Hansa Yellow Medium [<a href="#">GO.a.ab.af</a>];</p>	11738	<p>Monoazo;</p> <p>Arylide;</p> <p>Arylamide;</p> <p>CAS 13515-40-7</p>	Bright green to mid shade yellow	2-3*	I	35-50	A	* available in unstabilized transparent types, or alternatively, in redder shade, weaker, more opaque and weather fast types, stabilized against recrystallization ( <a href="#">Ref at Paint &amp; Coatings Industry Magazine, article "Evaluation of Various Organic Color Pigments" January 1, 2010</a> );
PY74	Arylide Yellow 5GX	<p>Arylide Yellow;</p> <p>Arylide Yellow 5GX;</p> <p>Arylide Yellow 74;</p> <p>Arylide Yellow GY;</p> <p>Arylide Yellow Medium [ <a href="#">KA.ad</a>   <a href="#">SQ.a</a>   <a href="#">TA.a.af</a>];</p> <p>Arylamide Yellow [<a href="#">CR</a>];</p> <p>Azo Yellow Light [<a href="#">OH.a</a>   <a href="#">RT.a</a>];</p> <p>Azo Yellow Medium [<a href="#">RT.a</a>   <a href="#">WN.a</a>];</p> <p>Brilliant Yellow [KP.p];</p> <p>Brilliant Yellow 5GX;</p> <p>Cadmium Yellow Hue [<a href="#">SCH</a>];</p> <p>Cadmium Yellow Medium Hue [<a href="#">WN.a</a>];</p> <p>Cadmium Yellow Pale Hue [<a href="#">WN</a>];</p> <p>Chrome Lemon (hue);</p> <p>Chrome Yellow Hue [<a href="#">DR.o</a>];</p> <p>Chrome Yellow Light Hue [<a href="#">PE.o</a>];</p> <p>C.I. Pigment Yellow 74;</p>	11741	<p>Monoazo;</p> <p>Arylide;</p> <p>Arylamide;</p> <p><a href="#">LBNL Pigment Database Spectral radiative properties; Yellow Medium Azo</a>;</p> <p>CAS 6358-31-2</p>	Bright mid to greenish yellow	1-4*	II*	40-65	A	<p><a href="#">MSDS</a></p> <p>A good primary yellow for color mixing in artist paints, although it is slightly transparent.</p> <p>* transparency depends on formulation. Comes in both opaque and transparent versions. It appears that the light fastness is better in opaque formulations.</p>

		<p>Dalamar [GU];  Dalamar Opaque [GU*];  Dalamar Yellow;  French Primary Yellow [CH];  Golden 74 [GU];  Hansa Brilliant Yellow 5GX;  Hansa Yellow [GEN   <a href="#">CAS.k</a>   DS.i.o];  Hansa Yellow Medium [DS.a.i.o.p.w   <a href="#">DV.k.w</a>   <a href="#">GB.o.o</a>   <a href="#">KA.o.p</a>];  Hansa Yellow Opaque [ <a href="#">GQ.a.ao</a> ];  Indian Yellow (hue) [DG   <a href="#">SV</a>];  Japanese Yellow Light [<a href="#">LB.o</a>];  Juane Primaire [<a href="#">LB.o</a>];  Lascaux yellow [<a href="#">LA.a</a>];  Light Chrome Yellow Hue [<a href="#">PE</a>];  Light Fast Yellow 5GX;  Light Yellow [MA];  Permanent Light Yellow [<a href="#">PF.w</a>];  Permanent Yellow;  Permanent Yellow, lead free;  Permanent Yellow Medium [<a href="#">RT.a</a>   <a href="#">WL.o</a>];  Pigment Yellow 74;  Primary Yellow [<a href="#">DB.a</a>   <a href="#">DR.a</a>   <a href="#">LQ.a</a>   <a href="#">TA.a</a>   <a href="#">LB.o</a>   <a href="#">SE.a</a>];  Process Yellow [<a href="#">WN.a</a>];  Scheveningen Yellow Light [<a href="#">OH.o.w</a>];  Senegal Yellow [<a href="#">LB.av</a>];  Spectrum Yellow [AS];  Transparent Yellow [<a href="#">CR.ao.o</a>];  Winsor Yellow [<a href="#">WN.k.o</a>];  Yellow Medium Azo [<a href="#">DB.a</a>   <a href="#">LQ.a</a>];  Yellow Mid Azo [MT]</p>								
PY75	Arylide Yellow	<p>Arylide yellow;  C.I. Pigment Yellow 75;  Hansa Yellow Deep [<a href="#">DV.k</a>   <a href="#">GB.o</a>   <a href="#">RGH.o.p</a>];  Hansa Yellow Light [<a href="#">RGH.o.p</a>];  Fast yellow RX;  Pigment Yellow 75;  Traffic yellow</p>	11770	<p>Monoazo;  Arylide;    CAS 52320-66-8</p>	<p>Reddish to orange shade yellow</p>	3-4	I	45	A	Used for traffic paint yellow
PY77	Disazo Condensation Yellow	<p>C.I. Pigment Yellow 77;  Disazo Condensation Yellow;  Pigment Yellow 77</p>	-	Disazo Condensation	-	-	-	-	-	-
PY81	Diarylide Yellow H10G	<p>Benzidine Yellow 10G;  C.I. Pigment Yellow 81;  Diarylide Yellow H10G;  Disazo Yellow R;  Novoperm Yellow;  Pigment Yellow 81;  Sanyo Pigment Yellow;  Symuler Fast Yellow</p>	21127	<p>Disazo;  Benzidine;    CAS 22094-93-5</p>	<p>Greenish lemon yellow</p>	3	II	35	A	-
PY83	Diarylide Yellow HR	<p>Antique Orange Yellow [<a href="#">HO.w(ant)</a>];  Antique Sun Yellow;  Azo Yellow Deep [<a href="#">QH.a</a>];  Azo Yellow Orange [<a href="#">UI.a</a>];  Beach Yellow;  Benzidine Yellow [<a href="#">HO.wo</a>];</p>	21108	<p>Disazo (Diarylide ) (Benzidine) Condensation;  3,3' dichlorobenzidine coupled with acetoacet-4-methoxy-5-chloro-o-</p>	<p>Light, deep yellow, reddish undertone;  † slight darkening in masstone</p>	1-4*	<p>I-III? **  BWS 6-7;5-6;4-5    <a href="#">(guerra paint)</a></p>	57	A	<p>* can be produced in opaque, semi-opaque and transparent forms.  ** AMST rated I, BWS at <a href="#">(guerra paint)</a> puts it as a marginal fair for the transparent form</p>

		<p>Blockx Yellow <a href="#">[BX.o.w]</a>;  Bright Yellow <a href="#">[SE.o]</a>;  Cadmium Yellow Deep Hue <a href="#">[DR.a.o]</a>   <a href="#">LQ.a</a>   <a href="#">MR.o</a>];  Cadmium Yellow Orange (hue);  C.I. Pigment Yellow 83;  Deep Yellow <a href="#">[HO.af.ag]</a>   MA];  Diarylide HR <a href="#">[GU]</a>;  Diarylide Yellow <a href="#">[GO.a.ab.af.ag.ao]</a>   <a href="#">KA.p</a>   <a href="#">LA.a</a>   <a href="#">SE.a</a>   <a href="#">WN]</a>];  Diarylide Yellow 83;  Diarylide Yellow Deep <a href="#">[MR.o]</a>];  Diazo Yellow;  Disazo Yellow;  Gamboge Extra <a href="#">[OH.a]</a>];  Hansa Yellow Orange [CL];  Indian Yellow (hue) [ <a href="#">CAS.k</a>   <a href="#">DS.o</a>   <a href="#">DV.k</a>   <a href="#">GB.o</a>   <a href="#">KA.o</a>   <a href="#">MH.o</a>   <a href="#">RF.e</a>   <a href="#">ROSS.o</a>   <a href="#">SCH</a>   <a href="#">WL.o</a>];  Indian Yellow Orange (hue) <a href="#">[SE.o]</a>];  Indian Yellow Permanent (hue) <a href="#">[GB.o]</a>   <a href="#">WL.p</a>];  Marigold <a href="#">[HO.a.g]</a>];  Opaque Deep Yellow <a href="#">[HO.af.]</a>];  Permanent Indian Yellow;  Permanent Yellow Deep <a href="#">[MA.p]</a>];  Pigment Yellow 83;  Primary Yellow [MA];  Scheveningen Yellow Deep <a href="#">[OH.o.w]</a>];  Stil De Grain Yellow (hue);  Tilt Yellow <a href="#">[MA.o(HD)]</a>];  Yellow Deep [MT];  Yellow Orange Azo <a href="#">[LQ.a]</a></p>		<p>anisidide;   <a href="#">LBNL Pigment Database Spectral radiative properties</a>;  <a href="#">Yellow Orange Azo</a>;   C<sub>36</sub>H<sub>32</sub>C<sub>14</sub>N<sub>6</sub>O<sub>8</sub>   CAS 5567-15-7</p>						
PY87	Diarylide Yellow 1285	<p>C.I. Pigment Yellow 87;  Diarylide Yellow;  Indian Gold Transparent <a href="#">[RGH.o]</a>];  Indian Yellow Transparent <a href="#">[RGH.o]</a>];  Lionol Yellow FFR;</p>	21107:1	<p>Disazo  CAS 15110-84-6</p>	<p>Reddish yellow</p>	3	II	-	A	-
PY93	Disazo Yellow 3G	<p>Disazo Yellow 3G;  Disazo Yellow 93;  Chromophtal Yellow 3G <a href="#">[GU]</a>];  C.I. Pigment Yellow 93;  Pigment Yellow 93;  Microlith Yellow 4G-A;  Monolite Yellow 3G;  Turner Yellow <a href="#">[SE.o]</a></p>	20710	<p>Organic;  Disazo  Condensation;   CAS 5580-57-4</p>	<p>Slightly dull greenish to medium yellow</p>	3	I BWS 8;8;8 <a href="#">(guerra paint)</a>	62.2	A	May be a good Gamboge substitute in artist colors.
PY94	Cromophtal Yellow 6G	<p>C.I. Pigment Yellow 94;  Cromophtal Yellow 6G;  Foscolor Yellow 94;  Pigment Yellow 94</p>	20038	<p>Organic;  Disazo  Condensation;   CAS 5580-58-5</p>	<p>Greenish yellow</p>	-	-	-	A	-
PY95	Disazo Yellow GR	<p>C.I. Pigment Yellow 95;  Cromophtal Yellow GR;  Diarylide Yellow R;  Disazo Yellow GR;  Gamboge Extra (hue) <a href="#">[OH.a]</a>];  Heuco Yellow;  Pigment Yellow 95;</p>	20034	<p>Organic;  Disazo  Condensation;   CAS 5280-80-8</p>	<p>Reddish to mid-shade yellow</p>	-	II	70	A	-

		Transparent Yellow <a href="#">[HO.o]</a>								
PY97	Diarylide Yellow FGL	Arylide Yellow FGL <a href="#">[DV.o.w]</a> ; Azo FGL [GU]; Azo Yellow FGL (green shade); C.I. Pigment Yellow 97; Diarylide Yellow FGL; Graphitol Yellow CI; Hansa Yellow Deep <a href="#">[MG.w]</a> ; Hansa Yellow FGL; Hansa Yellow Medium [DS.a.w]; Permanent Yellow FGL; Permanent Yellow Light [LK]; Primary Yellow <a href="#">[MA.a.o.w.w]</a> ; Pigment Yellow 97; Transparent Yellow <a href="#">[WN.d]</a> ;	11767	Monoazo; Diarylide; Monoazo Acetoacetyl Sulphamide;  CAS 12225-18-2	Bright, light, mid-shade yellow; †Fades	3	II  BWS 8;7;7 <a href="#">(guerra paint)</a>	40-52	A	-
PY98	Diarylide Yellow	C.I. Pigment Yellow 98; Diarylide Yellow; Hansa Yellow; Lemon Yellow <a href="#">[HO.af]</a> ; Pigment Yellow 98	11727	Monoazo; Diarylide;  CAS 32432-45-4	Very light & bright lemon yellow	3	II	42	A	-
PY100	Tartrazine Lake	C.I. Pigment Yellow 100; Conalake Tartrazine; FD&C Yellow 5 Aluminum Lake; Indian Yellow (hue) <a href="#">[KA.p   WN.o.d]</a> ; Pigment Yellow 100; Tartrazine Lake; Tartrazine Yellow;	19140:1	Monoazo; Tartrazine Lake;  CAS 12225-21-7	Orangey yellow	-	IV	-	A <a href="#">MSDS</a>	-
PY101	Lumogen Yellow	C.I. Pigment Yellow 101; Lumogen Yellow; Pigment Yellow 101	48052	Disazomethine;  CAS 2053-29-4	Brilliant florescent greenish yellow	4	II	-	A	-
PY104	FD&C Yellow 6	C.I. Food Yellow 3; C.I. Pigment Yellow 104; Conalake Sunset Yellow; FD&C Yellow 6 Aluminum Lake; Pigment Yellow 104; Sunset Yellow Lake	15985:1	Monoazo;  CAS 15790-07-5	Orange shade yellow	4	-	-	A	-
PY105	D&C Yellow No 10 lake	C.I. Pigment Yellow 105; D&C Yellow No 10 lake; Monolite Fast Yellow 6G; Pigment Yellow 105	11743	Monoazo;  CAS 12236-75-8	Bright greenish yellow	4	-	-	A	-
PY108	Anthrapyrimidine Yellow	Anthra Golden [GU]; Anthrapyrimidine Yellow; C.I. Pigment Yellow 108; Gamboge Gum Modern; Gamboge Modern <a href="#">[SCH]</a> ; Indian Yellow (hue?) [DS.w]; Lasyr gula; Magnesium Euxanthate; Natural Yellow 20?*; Paliogen Yellow RT; Pigment Yellow 108; Pyramid Yellow; Pyramid-Yellow medium [KP.p]; Snoeshoe yellow	68420	Synthetic organic vat pigment; Anthrapyrimidine: Heterocyclic Anthraquinone; Magnesium euxanthate ( <i>compare NY20 Indian Yellow</i> );  CAS 4216-01-7	Bright mid to reddish yellow; †Darkens, reddens	2-4	I-II  BWS 8;8;8 <a href="#">(guerra paint)</a>	41-51	A <a href="#">MSDS</a>	?* Magnesium Euxanthate is thought to be the main yellow coloring chemical of genuine natural Indian yellow. It is possible ( <i>ed. Probable</i> ) the urine of cow history of Indian Yellow is nothing more than an myth ( <a href="#">see my blog article</a> ) and true Indian Yellow is simply PY 108, possibly from a plant source and mixed with magnesia or precipitated on a calcium base. ( <i>compare NY20 Indian Yellow</i> );



										(Ref Color: a natural history of the palette p.204), (Ref), (Ref wikipedia).  May need wetting agent (Ref)
PY109	Isoindole Yellow	C.I. Pigment Yellow 109; Foscolor Yellow 109; Irgazin Yellow 2GLT [GU]; Isoindole Yellow [GEN   KP.p]; Isoindolgelb [KP.p]; Isoindolinone Yellow; Pigment Yellow 109	56284	Isoindolinone; Tetrachloro-isoindolinone;  CAS 5045-40-9	Greenish to reddish yellow	4	I  BWS 8;8;7 (guerra paint)	31-42	A  MSDS	-
PY110	Isoindolinone Yellow	C.I. Pigment Yellow 110; Gamboge (Hue) [MG.d]; Indian Yellow (hue) [MG.a.q.w   RT.q.wo   SQ.a   TA.a.af]; Indian Yellow Orange Extra [OH.a]; Isoindolinone Yellow; Isoindolinone Yellow R; Isoindolinone Yellow Deep [HQ.w   KA.ad]; Irgazin Golden [GU]; Irgazin® light orange 2 RLT [KP.p]; Irgazin Yellow; Irgazin Yellow 2RLT; Permanent Yellow [LA.a]; Permanent Yellow Deep [DS.w]; Pigment Yellow 110; Rowney Orange [DR]; Stil de Grain Yellow (hue) [RT.o]	56280	Synthetic organic; Tetrachloro-isoindolinone;  CAS 5590-18-1	Light, deep yellow with red undertone	2-4	I  BWS 8;8;8 (guerra paint)	31-42	A  MSDS	Nice deep yellow; May require wetting agent
PY111	Hansa Brilliant Yellow	C.I. Pigment Yellow 111; Hansa Brilliant Yellow 7GX; Irgalite Yellow F4G; Pigment Yellow 111	11745	Monoazo; Arylamide;  CAS 15993-42-7	Greenish yellow	-	III	-	A	-
PY112	Flavanthrene Yellow	Anthraquinone Yellow; C.I. Pigment Yellow 112; Flavanthrene; Flavanthrene (8CI); Flavanthrene Yellow; Indanthren Yellow GLP; Indanthrene Yellow G; Permanent Indian Yellow (hue) [LQ.a.d.o.f]; Pigment Yellow 24*; Pigment Yellow 112; Vat Yellow 1	70600	Naphthol; Anthraquinone;  CAS 82601-32-9	Dull reddish yellow	4	I	35	A	* same pigment as PY24?(Ref)
PY113	Disazo Yellow 10HG	C.I. Pigment Yellow 113; Disazo 10HG [GU]; Disazo Yellow; Pigment Yellow 113	-	Disazo	Very Green Yellow	-	II  BWS 7-8;6-7;5-6 (guerra paint)	-	A	removed from market (Ref)
PY115	D&C Yellow 10	Ariabel Yellow 12.42; C.I. Pigment Yellow 115; D&C Yellow 10; D&C Yellow 10 Aluminum Lake; Pigment Yellow 115	47005:1	Quinoline; Aluminum salt of sulfinated  CAS 68814-04-0	Bright greenish yellow	4	-	-	A	-
PY116	Helio Fast	C.I. Pigment Yellow 116;	11790	Monoazo;	Golden	2-3	II	-	A	-

	Yellow ER	Helio Fast Yellow ER; Golden 116 [GU]; Pigment Yellow 116; Suimei Fast Yellow		CAS 30191-02-7	reddish yellow		BWS 7;6;5 ( <a href="#">guerra paint</a> )			
PY117	Paliotol Yellow	Azo Methine Medium [GU]; Azomethine; Greenish Yellow [ <a href="#">HQ.o.w.w</a>   <a href="#">SH.w</a> ]; Paliotol Yellow; Pigment Yellow 117	-	Azomethine copper complex	Bright, very light green to midshade yellow	-	I-II? BWS 8;8;8 ( <a href="#">guerra paint</a> )	-	A	-
PY118	Chromium Titan Yellow	Chromium Titan Yellow; C.I. Pigment Yellow 118; Disazo H10?; Pigment Yellow 118	77894	Inorganic; Chromium Titan Yellow; Titanium, Nickel, Antimony, Chromium oxide as a mixed-phase pigment.; Titanium dioxide with nickel oxide, antimony oxide-chromium oxide approximately corresponding to the formula (Ti,Ni,Sb,Cr)Oz ( <a href="#">Ref Inorganic Colouring Matters, Color Index 3rd Ed.</a> )	Reddish yellow	-	-	-	B	-
PY119	Zinc Iron Yellow	C.I. Pigment Yellow 119; Daipyroxide Brown 9211; Iron Zinc Brown; Iron Zinc Brown Spinel; Iron Zinc Oxide; Magnesium Brown [ <a href="#">WN.w.wp</a> ]?*; Mars Yellow [ <a href="#">HQ.w</a> ]; Pigment Yellow 119; Tuscan Earth [ <a href="#">SE.o</a> ]; Zinc Ferrite Brown; Zinc-Iron Brown, dark [KP.p]; Zinc Iron Brown, dark, spinel [KP.p]; Zinc Iron Brown, light [KP.p]; Zinc Iron Brown, light, spinel [KP.p]; Zinc Ferrite Brown; Zinc Ferrite Brown Spinel; Zinc Iron Brown; Zinc Iron Oxide; Zinc Iron Yellow	77496	Inorganic; Iron zinc oxide (Zn,Fe)Fe2O4 or Fe2O4Zn Spinel Phase Pigment; Zinc Ferrite Brown Spinel, is created by the calcination of Zinc (II) Oxide, Iron (II) Oxide, and Iron (III) Oxide in varied ratios that create a homogeneous, ionically interdiffused spinel form crystalline matrix. All or either of the chemicals Al2O3, InO2, NiO, SiO2, SnO2 and/or TiO2 can be used as modifiers ( <a href="#">Reference: 4th ed. CMPA Classification and Chemical Description of the Complex Inorganic Color Pigments.</a> );  Iron magnesium oxide?*	Dull yellow to brownish	3	1	15-20	A <a href="#">MSDS</a>	* The 1997 edition of the Color Index International <i>Pigment and Solvent Dyes Edition</i> , list PY119 as Zinc Ferrite Brown Spinel. WN list this color as 'Iron magnesium oxide', being a <a href="#">mixed metal oxide</a> it's possible they may both be PY119, but most likely Winsor and Newton have a typo in their technical specs, and this should actually be PBr11, which is 'Iron Magnesium Oxide';

				CPMA 13-36-7; CAS 12063-19-3; CAS 68187-51-9						
PY120	PV Fast Yellow H2G	Benzimidazo H2G [GU]; Benzimidazolone Yellow; C.I. Pigment Yellow 120; Gafast Pigment Yellow 120; Novoperm Yellow H2G; Pigment Yellow 120; PV Fast Yellow H2G; Scheveningen Yellow Medium [ <a href="#">OH.o.w</a> ]	11783	Monoazo; Benzimidazolone; Gafast Pigment Yellow 120 ( <a href="#">Tech Sheet Reference</a> );; CAS 29920-31-8	Bright, light, mid-shade yellow; †Darkens, browns	3	II? BWS 8;8;8 ( <a href="#">guerra paint</a> )	50	A <a href="#">MSDS</a>	-
PY126	Diarylide Yellow DGR	C.I. Pigment Yellow 126; Diarylide Yellow DGR; Permanent Yellow 3G; Permanent Yellow DGR; Pigment Yellow 126	21101	Disazo; CAS 90268-23-8	Bright yellow reddish undertone	2	III	45	A	-
PY127	Benzidine Yellow GRL	Benzidine Yellow GRL; C.I. Pigment Yellow 127; Permanent Yellow GRL; Pigment Yellow 127	21102	Mixed coupling Disazo; CAS 68610-86-6	Bright greenish yellow	-	I	50	A	-
PY127:1	DCC Diarylide Yellow	C.I. Pigment Yellow 127:1; DCC 1232 Diarylide Yellow; Pigment Yellow 127:1	21102:1	Mixed coupling Disazo	Bright greenish yellow	-	-	-	A	-
PY128	Azo Condensation Yellow	Azo Condensation Yellow; Azo Yellow; C.I. Pigment Yellow 128; Cromophtal Yellow 8G; Indian Yellow Extra [ <a href="#">OH.a</a> ]; Pigment Yellow 128; Transparent Yellow [ <a href="#">WN.o</a> ]; Transparent Yellow Medium [ <a href="#">RT.a.a.o.wo</a> ]	20037	Disazo Condensation; CAS 79953-85-8	Bright transparent greenish yellow	4	I	41	A	Alternative to Aureolin
PY129	Irgazin Yellow	Australian Green Gold; Azo Green [ <a href="#">MG.a.o.w</a> ]; Azo Methine Dark [GU]; Azo Methine Dark (yellow Shade); Azomethine Yellow; C.I. Pigment Yellow 129; Golden Green [ <a href="#">SE.o</a>   <a href="#">OH.o.w</a> ]; Green Gold [ <a href="#">DR.w</a>   <a href="#">DV.o.w</a>   <a href="#">LQ.a</a>   <a href="#">OH.a</a>   <a href="#">WN.a.o.w.wp</a> ]; Green Yellow [LK]; Irgazin Yellow 5GT; Irgazin® Yellow, greenish [KP.p]; Magnacryl Azomethine Yellow; Old Holland Golden Green [ <a href="#">OH.o.w</a> ]; Old Holland Green Gold [ <a href="#">OH.a</a> ]; Pigment Yellow 129; Rich Green Gold [DS.a.o.w]; Transparent Yellow Green [ <a href="#">RT.o</a> ]	48042	Metal Complex (Copper Azomethine Green); Azomethine Copper Complex; CAS 15680-42-9	Slightly dull, light yellowish green*	4	I	49	A <a href="#">MSDS</a>	* More of a green than yellow
PY130	Pigment Yellow 130	C.I. Pigment Yellow 130; Pigment Yellow 130; Symuler Fast Yellow 4119	-	Monoazo	Reddish yellow	-	-	-	A	-

PY133	Pigment Yellow 133	C.I. Pigment Yellow 133; Pigment Yellow 133; Symuler Lake Fast Yellow 6G	-	Monoazo; Strontium salt;  CAS 132821-92-2	Greenish yellow	-	-	-	-	-
PY134	Pigment Yellow 134	C.I. Pigment Yellow 134; Pigment Yellow 134; Symuler Fast Yellow 2RF	-	Disazo	Reddish yellow	-	-	-	A	-
PY136	Pigment Yellow 136	C.I. Pigment Yellow 136; Pigment Yellow 136; Symuler Fast Yellow GRNF	-	Disazo	Mid-shade yellow	-	-	-	A	-
PY137	Isoindoline Yellow	C.I. Pigment Yellow 137; Isoindoline Yellow; Pigment Yellow 137	-	Quinophthalone; Isoindoline	-	-	-	-	-	-
PY138	Quinophthalone Yellow	C.I. Pigment Yellow 138; Gafast Pigment Yellow 138 - OP; Gafast Pigment Yellow 138 - TR ; Isoindoline Yellow; Lithol Fast Yellow; Paliotol® Yellow K 0961 HD; Permanent Lemon Yellow [ <a href="#">PF.w</a> ]; Permanent Yellow [ <a href="#">DR.w</a> ]; Pigment Yellow; Quinophthalone Opaque [GU]; Quinophthalone Yellow [GU]; Rape Yellow	56300	Isoindoline; Gafast Pigment Yellow 138 - OP ( <a href="#">Tech Sheet Reference</a> ); Gafast Pigment Yellow 138 - TR ( <a href="#">Tech Sheet Reference</a> );  CAS 30125-47-4	Very light, bright, greenish to reddish yellow*; †Lightens	1-3*	I  BWS 8;8;8 ( <a href="#">guerra paint</a> )	19-43	A  <a href="#">MSDS</a>	* The reddish yellow shade is extremely opaque. The greenish shade is transparent and has higher tinctorial strength ( <a href="#">Ref: special chemical coatings.com color-handbook</a> ).
PY139	Isoindoline Yellow	C.I. Pigment Yellow 139; Deep Yellow [ <a href="#">RT</a> ]; Gafast Pigment Yellow 139; Indo Golden [GU]; Indian Yellow (hue) [ <a href="#">CR.a(jo)</a>   <a href="#">JO.a</a>   <a href="#">LQ.a</a>   <a href="#">MA.d</a>   <a href="#">WN.k</a> ]; Isoindolinone Yellow [ <a href="#">KA.o.p</a> ]; Isoindoline Yellow [DS.w]; Isoindolinone Yellow; Lithol Fast Yellow; Paliotol® Yellow; Paliotol® Yellow-Orange [KP.p]; Permanent Yellow Deep [ <a href="#">MA.w.w</a> ]; Pigment Yellow 139; Yellow Deep [ <a href="#">CAS.k</a> ];	56298	Isoindoline; Gafast Pigment Yellow 139 ( <a href="#">Tech Sheet Reference</a> );  CAS 36888-99-0	Light to deep reddish yellow*; † slight fading	2-3	I-II  BWS 8;8;8 ( <a href="#">guerra paint</a> )	45-69	A  <a href="#">MSDS</a>	* May be a good Indian yellow (hue) substitute  May require wetting agent
PY147	Pigment Yellow 147	Antra Brite Gold [GU]; Anthrapyrimidine Yellow; C.I. Pigment Yellow 147; Cromophtal Yellow AGR; Pigment Yellow 147; Yellow AGR	60645	Polycyclic Anthraquinone; Anthrapyrimidine;  CAS 4118-16-5	Light, deep yellow	4	I  BWS 8;7;7 ( <a href="#">guerra paint</a> )	55	-	-
PY148	Filamid Yellow 4G	C.I. Pigment Yellow 148; Filamid Yellow 4G; Pigment Yellow 148	50600	Polycyclic;  CAS 20572-37-6	Greenish yellow	-	-	-	-	-
PY150	Nickel Azo Yellow	Aureoline (hue) [ <a href="#">RT.o</a> ]; Azo Yellow; C.I. Pigment Yellow 150; Gamboge (hue);	12764	Monoazo nickel complex; Nickel Azomethine;  CAS 68511-62-6	Deep dull reddish yellow; †Slight fading	3	I  BWS 8;8;8 ( <a href="#">guerra paint</a> )	35-40	B  <a href="#">MSDS</a>	-

		Gamboge Hue; Green Gold; Helio Fast Yellow 4G; Indian Yellow Deep (hue) [ <a href="#">WN.o</a> ]; Indian Yellow Imitation [KP.p]; New Gamboge (hue); Nickel Azo [ <a href="#">WN.a</a> ]; Nickel Azo Brown Lemon [ <a href="#">OH.a</a> ]; Nickel Azo Yellow [GEN   DS.a.o.w   <a href="#">DV.w</a>   <a href="#">GO.a.ab.af.ag.aq</a>   <a href="#">MG.w</a>   SQ.a   <a href="#">TA.a</a>   <a href="#">WN.a</a> ]; Pigment Yellow 150; Transparent Yellow [ <a href="#">WN.w.wp.</a> ]; Translucent Golden Yellow [ <a href="#">SCH.a</a> ]; Translucent Yellow [ <a href="#">SCH.o(Mus).w</a> ]								
PY151	Benzimidazolone Yellow H4G	Aureolin (hue) [ <a href="#">SCH</a> ]; Aureolin Modern [ <a href="#">SCH.w</a> ]; Aureolin Yellow (hue) [ <a href="#">DB.w</a> ]; Azo Yellow [GEN   DS.o.w   <a href="#">MG.g.w</a> ]; Azo Yellow (Aureolin) [ <a href="#">MG.w</a> ]; Benzimidazo H4G [GU]; Benzimidazo Yellow H4G (green shade); Benzimidazolone Yellow; Canary Yellow [Sl.p]; C.I. Pigment Yellow 151; DCC 7151 Benzimidazolone Yellow; Gafast Pigment Yellow 151; Hostaperm Yellow H4G; John Deere Yellow; Monoazo Yellow; Permanent Yellow Light [KP.p]; Pigment Yellow 151;	13980	Monoazo; Benzimidazolone; Gafast Pigment Yellow 151 ( <a href="#">Tech Sheet Reference</a> );  CAS 31837-42-0	Intense light, mid to green shade yellow;  †Browns slightly	3	I  BWS 8;8;8 ( <a href="#">guerra paint</a> )	45-52	A  <a href="#">MSDS</a>	May have slight brownish cast;  Said to be a good lightfast and non-toxic substitute for Aureolin (Cobalt Yellow).
PY152	Diarylide Yellow 152	C.I. Pigment Yellow 152; Diarylide Yellow 152; Fast Diarylide Yellow; Pigment Yellow 152	21111	Disazo;  CAS 31775-20-9	Reddish yellow	-	II-III	-	A	-
PY153	Nickel Dioxime Yellow	Burnt Yellow [ <a href="#">UT.w</a> ]; C.I. Pigment Yellow 153; Dioxime Yellow [GU]; Gamboge (hue) [LK]; Gamboge Hue [ <a href="#">WN.w</a> ]; Indian Yellow (hue) [ <a href="#">DR.w</a>   <a href="#">RT</a>   <a href="#">SE.a</a>   <a href="#">SCH.a.g.o.(Mus).p</a>   <a href="#">UT.w</a>   <a href="#">WNg</a> ]; Indian Yellow Hue [ <a href="#">SE.w.</a> ]; New Gamboge [DS.a.w   <a href="#">WN.w</a> ]; Nickel Dioxime Yellow; Nickel Paliotol Yellow; Lemon Yellow Hue; Pigment Yellow 153	48545	Nickel Dioxime Complex;  CAS 29204-84-0	Bright, light, deep yellow. orange to brown undertone*	1-2	I	50	B	* Good Indian yellow (hue) substitute
PY154	Benzimidazolone Yellow 154	Azo Yellow Light [ <a href="#">RT.w</a> ]; Azo Yellow Medium [ <a href="#">RT</a> ]; Azo Yellow Deep [ <a href="#">RT</a> ]; Benzimidazo H3G [GU]; Benzimidazo Yellow H3G (green shade); Benzimidazolone Yellow [ <a href="#">KA.o.p</a> ]; Brilliant Yellow [ <a href="#">SCH.a.p</a> ]; Cadmium Yellow Pale Hue;	11781	Benzimidazolone;  CAS 68134-22-5	Bright, light greenish through to mid yellow	3	I-II?  BWS 8;8;8 ( <a href="#">guerra paint</a> )	58-60	A  <a href="#">MSDS</a>	Claimed to be good primary yellow

		<p>Cadmium Yellow Tone (hue) [SCH.g];  C.I. Pigment Yellow 154;  Da Vinci Yellow [DV.w];  Hostaperm Yellow H3G;  Imidazolone Yellow [HO.w];  Imidazolone Yellow Light [HO.wo];  Permanent Yellow Light [RT.o.wo];  Permanent Yellow Medium [KP.p   RT.wo];  Pigment Yellow 154;  Primary Yellow [BX.o.w];  Pure Yellow [SCH.w];  Sennelier Yellow Light [SE.w];  Sulphur Yellow;  Transparent Yellow [SQ.a];  Winsor Yellow [WN.w.wp.wp(L)]</p>								
PY155	Benzimidazolone Yellow 155	<p>Benzimidazolone Yellow;  Brilliant Yellow [SCH.o];  Cadmium Yellow Hue [LK];  Cadmium Yellow Tone [SCH.o(Mus)];  C.I. Pigment Yellow 155;  Permanent Yellow Light [LK];  Pigment Yellow 155;  Sandorin Yellow 4G</p>	200310	<p>Disazo;  Benzimidazolone;   CAS 68516-73-4;  CAS 77465-46-4</p>	Bright yellow	1	I	60	A	-
PY156	Benzimidazolone Yellow 156	<p>Benzimidazolone Yellow;  C.I. Pigment Yellow 156;  Midazo HLR [GU];  Pigment Yellow 156</p>	-	Benzimidazolone	Reddish yellow	4	I BWS 8;8;8 (guerra paint)	71	A	-
PY157	Daipyroxide Yellow	<p>C.I. Pigment Yellow 157;  Daipyroxide Yellow;  Nickel Barium;  Nickel-Barium Titanate [HO];  Nickel Barium Titanium;  Nickel Barium Titanium Yellow;  Nickel Barium Titanium Primrose Priderite;  Nickel Titanate Yellow [GR.o];  Pigment Yellow 157;  Priderite Yellow;  Primrose Priderite;  Nickel Yellow [HO.o];  Titanium Primrose;  Yellow Green Ural</p>	77900	<p>Inorganic;  Nickel Barium  Titanium  Primrose  Priderite, is a homogeneous, ionically interdiffused crystalline matrix of priderite created by calcining Nickel (II) Oxide, Barium (II) Oxide, and Titanium (IV) Oxide;   CPMA 9-13-4   CAS 68610-24-2</p>	<p>Greenish yellow   † may brighten</p>	1-2	I	-	B	-
PY158	Tin Vanadium Yellow	<p>C.I. Pigment Yellow 158;  Pigment Yellow 158;  Tin Vanadium Yellow Cassiterite;  Vanadium Yellow Cassiterite;</p>	77862	<p>Inorganic;  Tin Vanadium Yellow  Cassiterite (Sn,V)O<sub>2</sub> is created by the high temperature calcining of a mixture of Tin (IV) Oxide and Vanadium (V) Oxides in different amounts to create a crystalline cassiterite matrix. Its composition can have Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, MgO, NiO, SiO<sub>2</sub> and/or</p>	mid-shade yellow	-	-	-	-	-

				<p>TiO<sub>2</sub> as modifiers. (<a href="#">Ref Color Index 4th edition</a>);</p> <p>Tin Vanadium;</p> <p>CPMA 11-22-4</p> <p>CAS 68186-93-6</p>						
PY159	Zirconium Praesodymium Silicate Yellow	<p>C.I. Pigment Yellow 159; Intensive Yellow [KP.p]; Lemon Yellow Deep [<a href="#">W.N.w.wp.</a>]; Pigment Yellow 159; Praseodym Yellow [KP.p]; Zirconium Praesodymium Silicate [KP.p]; Zirkonium Praesodym Yellow [SI.p]; Zirconium Praesodymium Yellow Zircon; Zirconium Yellow</p>	77997	<p>Inorganic; Zirconium Praesodymium Silicate or Zirconium Praeseodymium Yellow Zircon (Zr,Pr)SiO<sub>4</sub> is created by the high temperature calcination of a various mixtures of oxides of Zirconium (IV) Oxide, Silicon (IV) Oxide, and Praseodymium (III, IV) Oxide to create a zircon crystalline form. It may include less than 5% of either one or both alkali and/or alkaline earth halides as modifiers. (<a href="#">Ref Color Index 4th edition</a>);</p> <p>CPMA 14-43-4;</p> <p>CAS 68187-15-5</p>	Very light lemon yellow	3	I	-	A	-
PY160	Zirconium Vanadium Yellow	<p>Baddeleyite; C.I. Pigment Yellow 160; Pigment Yellow 160; Vanadium Yellow Zirconium Vanadium Yellow; Zirconium Vanadium Yellow Baddeleyite</p>	77991	<p>Inorganic; Zirconium Vanadium Yellow Baddeleyite (Zr,V)O<sub>2</sub> is produced by high temperature calcination of a mixture of oxides of zirconium and vanadium in varied amounts to create a crystalline matrix of baddeleyite. It may include any one or more of the modifiers Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, In<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub> and/or TiO<sub>2</sub>. (<a href="#">Ref Color Index 4th edition</a>);</p> <p>CPMA 1-01-4 (<a href="#">4th ed. C.M.P.A. Classification and Chemical Description of the Complex Inorganic Color Pigments</a>).</p> <p>CAS 68187-01-9</p>	Mid-shade to reddish yellow	-	-	-	-	-

PY161	Nickel Niobium Titanium Yellow	C.I. Pigment Yellow 161; Nickel Niobium Titanium Yellow Rutile; Nickel Niobium Yellow Rutile; Pigment Yellow 161	77895	Inorganic;  Nickel Niobium Titanium Yellow Rutile is prepared by the calcination of oxides of nickel, niobium, and titanium, (Ti,Ni,-Nb)O <sub>2</sub> creating a rutile crystalline form. The composition may have Cr <sub>2</sub> O <sub>3</sub> or SrO as modifiers. <a href="#">(Reference: Coatings Technology handbook, Third Edition, Edited by Arthur A. Tracton, 2006 by CRC Press);</a>  Mixed Metal Oxide (MMO) <a href="#">(PCImag Ref):</a>  CPMA 11-16-4  CAS 68611-43-8	Greenish yellow	1	I	14	B	-
PY162	Chrome Niobium Titanium Buff Rutile	Chrome Niobium Titanium Buff; Chrome Niobium Titanium Buff Rutile; C.I. Pigment Yellow 162; Pigment Yellow 162	77896	Inorganic;  Chrome Niobium Titanium;  Produced by calcining Titanium (IV) Oxide, Chromium (III) Oxide, and Niobium (V) Oxide, with the approximate formula of (Ti,Cr,Nb)O <sub>2</sub> . It may also have NiO and/or SrO as modifiers. <a href="#">(Reference: Coatings Technology handbook, Third Edition, Edited by Arthur A. Tracton, 2006 by CRC Press);</a>  CPMA 11-18-6  CAS 68611-42-7	Reddish yellow	1	I	18	A	-
PY163	Chromium Tungsten Titanium Buff	Chrome Tungsten Titanium Buff Rutile; Chromium Tungsten Titanium Buff Rutile; C.I. Pigment Yellow 163; Meteor Orange 7383; Meteor® Orange Buff 9385; Pigment Yellow 163	77897	Inorganic;  Chromium Tungsten Titanium Buff Rutile (Ti,Cr,W)O <sub>2</sub> is created by the calcining at high temperature a mixture of Titanium (IV) Oxide, Chromium (III) Oxide, and Tungsten (VI) Oxide in various ratios to produce a crystal rutile matrix. It may also include	-	1	I	11	A	- <a href="#">MSDS</a>



				Nickel(II) oxide as a modifier. <a href="#">(Ref Color Index 4th edition);</a>						
				Chromium Tungsten Titanium;  tungsten- chrome-III- titanium dioxide rutile;						
				CPMA 11-19-6						
				CAS 68186-92-5						
PY164	Manganese Antimony Titanium Buff Rutile	Antimony Manganese Buff Rutile; Brown 10C873; Chestnut Brown 400; C.I. Pigment Yellow 164; Cinnamon Brown 298; Ferro Chestnut Brown V-10364; Indian Brown No. 221; Manganese Antimony; Manganese Antimony Titanium Buff; Manganese Antimony Titanium Buff Rutile; Manganese Brown [GU]; Rembrandt Brown 352; Titanium Buff Rutile; Pigment Yellow 164	77899	Inorganic;  Manganese Antimony Titanium Buff Rutile (Ti, Mn, Sb)O <sub>2</sub> is created by calcining at high temperature a mixture of oxides of manganese, titanium and antimony in varying amounts to create a crystalline rutile matrix. Its constitution may include one or more of the modifiers: Al <sub>2</sub> O <sub>3</sub> , Cr <sub>2</sub> O <sub>3</sub> , NiO, WO <sub>3</sub> and/or ZnO. <a href="#">(Ref Color Index 4th edition);</a>	Brown	1	I	12-16	B  <a href="#">MSDS</a>	-
				<a href="#">LBNLPigment Database Spectral radiative properties;</a>  <a href="#">Manganese Antimony Titanium Buff Rutile;</a>						
				CPMA 11-20-6						
				CAS 68412-38-4						
PY165	Sanyo Fast Yellow F5G	C.I. Pigment Yellow 165; Pigment Yellow 165; Sanyo Fast Yellow F5G	-	Monoazo	Reddish yellow	1	-	-	A	-
PY166	Cromofine Yellow	C.I. Pigment Yellow 166; Cromofine Yellow; Pigment Yellow 166	20035	Disazo Condensation;	mid-shade yellow	-	-	-	A	-
				CAS 76233-82-4						
PY167	Seikafast Yellow A-3	C.I. Pigment Yellow 167; Pigment Yellow 167; Seikafast Yellow A-3	11737	Monoazo;	Bright green yellow	-	-	-	A	-
				CAS 38489-24-6						
PY168	Azo Yellow 168	Azo Yellow; C.I. Pigment Yellow 168; Lionel Yellow K-5G;	13960	Monoazo;	Bright green yellow	3	I	50-56	A	-
				CAS 71832-85-4						

		Pigment Yellow 168								
PY169	Lionol Yellow K-2R	C.I. Pigment Yellow 169; Lionol Yellow K-2R; Pigment Yellow 169	13955	Monoazo; CAS 73385-03-2	Reddish yellow	-	-	-	A	-
PY170	Pigment Yellow FRN	C.I. Pigment Yellow 170; Lionol Yellow FR; Permanent Yellow Orange; Pigment Yellow FRN 170; Pigment Yellow FRN	21104	Disazo; CAS 31775-16-3	Reddish yellow	2	I	40	A	-
PY172	Lionol Yellow NBK	C.I. Pigment Yellow 172; Lionol Yellow NBK; Pigment Yellow 172	21109	Disazo; CAS 76233-80-2	Bright mid-shade yellow	-	II-III	-	A	-
PY173	Isoindolinone Yellow	C.I. Pigment Yellow 173; Isoindolinone Yellow; Isoindolinon Yellow [KP.p]; Pigment Yellow 173; Sandorin Yellow 6GL	561600	Isoindolinone; CAS 96352-23-7	Greenish yellow	1	II	-	A	- <a href="#">MSDS</a>
PY174	Irgalite Yellow LBT	C.I. Pigment Yellow 174; Diarylide Yellow AAoT Irgalite Yellow LBT; Pigment Yellow 174	21098	Disazo; CAS 78952-72-4	Bright mid-shade yellow	3	III	40-65	A	Reportedly Good primary yellow, however The light fastness of pigment yellow 174 is poor, and is not recommended for permanent art work. PY174 may have use for designers where permanence is not required or books that may have limited light exposure. ( <a href="#">Ref Industrial organic pigments, 2004</a> )
PY175	Benzimidazolone Yellow H6G	Aureolin (hue) [LK]; Benzimidazolone Yellow; Chrome Yellow Lemon (hue) [ <a href="#">SCH.w</a> ]; Chrome Yellow Lemon, no lead [ <a href="#">SCH.w</a> ]; C.I. Pigment Yellow 175; Hostaperm Yellow H6G; Imidazolone Lemon [ <a href="#">HO.w</a> ]; Lemon Yellow [DS.a.i.o.w   <a href="#">MA.a</a> ]; Lemon Yellow Hue; Lemon Yellow Hue #1 [ <a href="#">WN.w</a> ]; Permanent Lemon Yellow; Permanent Yellow Lemon [ <a href="#">MA.o.w.w</a> ]; Pigment Yellow 175; Winsor Lemon [ <a href="#">WN.w.wp</a> ];	11784	Benzimidazolone; CAS 35636-63-6	Bright light lemon yellow. greenish undertone	3	I	70	A	-
PY176	Diaryl Yellow	C.I. Pigment Yellow 176; Diaryl Yellow; Isol Diaryl Yellow; Permanent Yellow GRX; Pigment Yellow 176	21103	Mixed coupling Disazo; CAS 90268-24-9	Bright mid-shade yellow red undertone	4	II	40	A	-
PY179	Pigment Yellow 179	C.I. Pigment Yellow 179; Cobalt azomethine; Cobalt Indo Golden [GU]; Irgazin Yellow 3R; Pigment Yellow 179	-	Cobalt azomethine metal complex; CAS 63287-28-5	Reddish yellow	4	I BWS 8;8;8 ( <a href="#">guerra paint</a> )	-	B	-
PY180	Benzimidazolone	C.I. Pigment Yellow 180;	21290	Benzimidazolone	Greenish	4	I-II	40	A	-

	Yellow	PV Fast Yellow HG; Isoindolinone Yellow [ <a href="#">HQ.wo</a> ]		disazo;  CAS 77804-81-0	yellow					
PY181	Benzimidazo Golden	Benzimidazo Golden [GU]; C.I. Pigment Yellow 181; PV Fast Yellow H3R; Pigment Yellow 181	11777	Benzimidazolone monoazo;  CAS 74441-05-7	Very reddish orange yellow	3	I-II  BWS 8;8;8 ( <a href="#">guerra paint</a> )	76	A	-
PY182	Sandorin Yellow	C.I. Pigment Yellow 182; Pigment Yellow 182; Sandorin Yellow G; Zanderin Golden [GU]	128300	Monoazo;  CAS 67906-31-4	Bright mid-shade yellow; red undertone	3	II  BWS 8;7;7 ( <a href="#">guerra paint</a> )	-	A	-
PY183	Paliotol Yellow K227	C.I. Pigment Yellow 183; Paliotol Yellow K2270; Pigment Yellow 183; Vynamon Yellow;	18792	Monoazo;  CAS 65212-77-3	Reddish yellow	-	II	60	A	<a href="#">MSDS</a>
PY184	Bismuth Vanadate Yellow	Alfa yellow [KP.p]; Bismuth-Vanadate Yellow lemon [KP.p]; Bismuth Vanadate [GU]; Bismuth Vanadate Yellow [GEN   DS.a.o.w   <a href="#">GO.a.ao</a> ]; Bismuth Yellow [ <a href="#">CAS.k</a>   <a href="#">DB.w</a>   <a href="#">DR.a.w</a>   <a href="#">MG.w</a>   SQ.a   <a href="#">TA.a.af</a>   <a href="#">WN.a.o.w.wp.</a> ]; Bismuth Yellow lemon [ <a href="#">QH.a</a> ]; Bismuth Yellow Light [ <a href="#">OH.a</a>   SQ.a   <a href="#">TA.a.af</a> ]; Bismuth Yellow Medium [ <a href="#">OH.a</a>   SQ.a   <a href="#">TA.a.af</a> ]; Bismuth Yellow Deep [ <a href="#">OH.a</a>   SQ.a   <a href="#">TA.a.af</a> ]; Bismuth-Vanadate Yellow Lemon [KP.p]; Bristol Yellow; Cadmium Yellow Light Hue [ <a href="#">LQ.a</a> ]; C.I. Pigment Yellow 184; Lefranc Yellow [ <a href="#">LB.o</a> ]; Lemon Yellow [ <a href="#">BX.o.w</a> ]; Permanent Lemon Yellow [ <a href="#">RT.a.o.wo</a> ]; Permanent Yellow Lemon [ <a href="#">RT.w</a> ]; Pigment Yellow 184; Sicopal Yellow; Vanadium Yellow [ <a href="#">SCH.g.w</a> ]; Vanadium Yellow Deep [ <a href="#">SCH.a.o(Mus).p</a> ]; Vanadium Yellow Light [ <a href="#">SCH.a.o.p</a> ]	771740	Bismuth Vanadium;  Bismuth orthovanadate;  Occurs in the natural minerals: Clinobisvanite, Deyerite and Pucherite;  CAS 14059-33-7	Bright light lemon yellow. greenish undertone to mid shade yellow;  †Darkens	2	I  BWS 8;8;8 ( <a href="#">guerra paint</a> )	30	A	Often used as a substitute for Cadmium Yellow Lemon
PY185	Isoindoline Yellow	C.I. Pigment Yellow 185; Isoindoline Yellow; Pigment Yellow 185; Sico Fast Yellow D	56290	Isoindoline;  CAS 76199-85-4	Bright greenish yellow	4	II	52	A	-
PY188	Irgalite Yellow	C.I. Pigment Yellow 188; Irgalite Yellow LBF; Pigment Yellow 188	21094	Disazo;  CAS 23792-68-9	Bright greenish yellow	-	III	40	A	-
PY189	Nickel Titanate	C.I. Pigment Yellow 189; Meteor Golden 8304; Nickel Titanate; Nickel Titanium Tungsten; Nickel Titanium Tungsten Yellow Rutile; Nickel Tungsten Yellow Rutile;	77902	Inorganic; Nickel Tungsten Yellow Rutile or Nickel titanate (with trace tungsten), is a mixed phase pigment of	Dull greenish yellow	-	*	-	-	* unrated by ASTM, but most other mixed phase pigments of this type have excellent light and weather fastness. Currently used mostly in plastics. and

		Pigment Yellow 189		Titanium (IV) Oxide, Nickel (II) Oxide, and Tungsten (VI) Oxide calcined at high temperatures to create a rutile matrix with the approximate formula of (Ti,Ni,W)O <sub>2</sub> . It may have CeO <sub>2</sub> , Li <sub>2</sub> O and/or MgO as modifiers. ( <a href="#">4th ed. CMPA Classification and Chemical Description of the Complex Inorganic Color Pigments</a> )						enamels.
				CPMA 11-52-4						
				CAS 69011-05-8						
PY190	Palitol Yellow K1570	C.I. Pigment Yellow 190; Palitol Yellow K1570; Pigment Yellow 190	-	Monoazo	Bright mid-shade yellow	-	-	-	A	-
PY191	Pigment Brilliant Yellow HGR	C.I. Pigment Yellow 191; PV Fast Yellow HGR; Pigment Brilliant Yellow HGR; Pigment Yellow 191; Pyrazolone yellow HGR	18795	Monoazo;  CAS 129423-54-7	Bright mid-shade yellow	-	I	40-60	A-B*  <a href="#">MSDS</a>	Good heat resistance;  * Causes severe eye irritation. Harmful if swallowed. May be harmful if inhaled. May cause irritation to skin and respiratory tract. see <a href="#">MSDS</a> .
PY191:1	Cromophtal Yellow	C.I. Pigment Yellow 191:1; Cromophtal Yellow; Pigment Yellow 191:1	-	Monoazo;  CAS 129423-54-7	Bright reddish yellow	-	-	-	A	-
PY192	Sandofil Yellow	C.I. Pigment Yellow 192; Pigment Yellow 192; Sandofil Yellow	65412	Heterocyclic	Dull reddish yellow	-	-	-	-	-
PY193	Anthraquinone Yellow	Anthraquinone Yellow; Chromofine Yellow AF-1300; C.I. Pigment Yellow 193; Pigment Yellow 193	65412	Anthraquinone;  CAS 70321-14-1	Dull reddish yellow	-	II	-	-	-
PY194	Novoperm Yellow F2G	C.I. Pigment Yellow 194; Novoperm Yellow F2G; Pigment Yellow 194	11785	Benzimidazolone;  CAS 82199-12-0	Bright green shade yellow	-	II	54-98	A	-
PY200	Sunglow Yellow	C.I. Pigment Yellow 200; Pigment Yellow 200; Sunglow Yellow	-	Azo	Reddish Yellow	-	-	-	A	-
PY203	Arylide Yellow	Arylide Yellow; Azo Yellow 5RX; C.I. Pigment Yellow 203; Pigment Yellow 203	117390	Arylide	Mid-shade yellow	-	-	-	A	-
PY204	Pigment Yellow 204	C.I. Pigment Yellow 204; Pigment Yellow 204	-	Monoazo	Medium yellow shade	-	-	-	A	commonly used for traffic paint
PY207	Neolor Yellow	C.I. Pigment Yellow 207;	-	Complex	Medium	-	-	-	A	-

		Neolor Yellow; Pigment Yellow 207		Inorganic	yellow shade					
PY216	Solaplex Yellow	Chrome Yellow Hue Deep [ <a href="#">SCH.o</a> ]; Chrome Yellow Hue Middle [ <a href="#">SCH.g</a> ]; C.I. Pigment Yellow 216; English Yellow [ <a href="#">UT.w</a> ]; Orange 10P320; Pigment Yellow 216; Rutile Tin Zinc; Solaplex Mid Yellow; Solaplex Orange; Turner's Yellow (hue) [ <a href="#">WN.w.wp</a> ] Zinc-Tin Rutile	-	Inorganic; Spherical complex of a tin-zinc-titania compound produced by high temperature calcination; Rutile Tin Zinc	Clean Bright Yellow to Orange	1	I	17-22.2	A MSDS <sup>1</sup>	High whether, chemical and light fastness  A example of a homemade Deep Yellow using Zinc-Tin Rutile (PY216) hand mulled into an paint and humorously named "Winter's Woe Deep Yellow Snow " by Perry Johnson at <a href="http://perryjohnson.net">http://perryjohnson.net</a>
PY219	Titanium Zinc Antimony Stannate	C.I. Pigment Yellow 219; Pigment Yellow 219; Titanium Zinc Antimony Stannate	-	Titanium Zinc Antimony Stannate	-	-	-	-	-	-
PY223	MayaCrom Yellow Y2351RS	C.I. Pigment Yellow 223; MayaCrom Yellow Y2351RS; Mayan Yellow [DS.w*]; Pigment Yellow 223	-	Patented Organic-Inorganic hybred based on the chemistry of Mayan Blue with a unique nano crystal lattice. Reference the <a href="#">Tech data sheet</a> , and <a href="#">Patent application</a> .; Article about Hybred Pigments and Mayan Blue in New Journal of Chemistry 2005, 29, p.57-58 ( <a href="#">Article Reference PDF</a> );	Reddish Yellow	4	II	65	A <a href="#">MSDS</a>	"evolved from work done at the University of Texas El Paso to reconstruct the unique vibrant blue color developed by the Maya civilization more than 1000 years ago, using an inorganic and organic component to produce a highly stable hybrid pigment."  - TOR Minerals International <a href="#">Press release</a> , ( <a href="#">Ref Mayan Pigments, Inc.</a> );  * more info on the Dan Smith <a href="#">PrimaTek™</a> artist paints and other minerals used for art pigments at the watercolor <a href="#">Handprint.com</a> site <a href="#">here</a> .
PY224	MayaCrom Yellow Y2300F	C.I. Pigment Yellow 224; MayaCrom Yellow Y2300F; Pigment Yellow 224	-	Patented Organic-Inorganic hybred based on the chemistry of Mayan Blue with a unique nano crystal lattice. Reference the <a href="#">Patent application</a> .	-	-	I	65	A <a href="#">MSDS</a>	See above PY223 ( <a href="#">Ref Mayan Pigments, Inc.</a> );
PY226	MayaCrom® Yellow Y7300	C. I . Pigment Yellow 226; MayaCrom® Yellow Y7300		Patented Organic-Inorganic hybred based on the chemistry of Mayan Blue with a unique nano crystal lattice. Reference the <a href="#">Tech data sheet</a> , and <a href="#">Patent application</a> .; Article about Hybred Pigments and Mayan Blue in New Journal of			I	65	A <a href="#">MSDS</a>	

				Chemistry 2005, 29, p.57-58 <a href="#">(Article Reference PDF)</a> ;						
PY227	NTP Yellow	CI Pigment Yellow 227; Niobium Sulfur Tin Zinc Oxide; Niobium Tin Pyrochlore; NTP Yellow; Yellow 10C150 <sup>1</sup> ; Yellow 10C151 <sup>2</sup> ;	-	Niobium Tin Pyrochlore; Niobium Sulfur Tin Zinc Oxide;  "A chromatic yellow inorganic pigment produced by high temperature calcination" <a href="#">(Ref)</a> ;  A brand new crystal structure and a yellow color not seen in inorganic pigments before  <a href="#">Shepherd Color Company</a>  patented under US Patent 8,192,541	Mid slightly reddish deep yellow similar to Lead Chromate	1	I	11	A <a href="#">MSDS1</a> <a href="#">MSDS2</a>	<a href="#">Ref. from the Shepherd Color Company website:</a>  "brand-new patented pigment technology that offers outstanding bright and opaque masstones and clean tints. It is the first high-performance alternative to have the coloristic and weathering performance to provide a viable replacement for lead chromate in wide selection of demanding applications"  "This pigment has excellent UV and visible opacity, is chemically inert, heat resistant, and stable to ultraviolet light. It is non-bleeding and non-migratory. It has exceptional durability and hiding power, and is generally used in applications where resistance to heat, light, and weather are needed."

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- Pigment Home
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- Orange
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- Green
- Brown
- Black
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PAINT AND PIGMENT REFERENCE TABLE KEY: [Page Top^](#)

**Jump to :** [Supplier/Manufacturer Codes](#) | [Binder/Medium Codes](#)

Color Index Generic Name	CI Common or Historical Name	Common, Historic and Marketing Names  Supplier codes Binder Codes	C.I. Constitution Number	Chemical Composition	Color Description I = Long Term Effects of Light	Opacity 1 = opaque 4 = trans.	Light Fastness I = excel. IV=Fugitive	Oil Absorption g/100g	Toxicity & Hazard Info	Side Notes
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Color Index Generic Name: [Key Top ^](#) [Page Top^](#)

This is the C.I. Generic Name (abbreviated) given by the ASTM and Colour Index International (CII) for that pigment. The first 2 or 3 letters describe the general pigment color and the number is the individual pigment identifier. N/A (not applicable) means that pigment has not been given a color index name or number.

**Natural Dye and Solvent Pigments**

These are naturally occurring organic pigments and dyes. With a few exceptions, most are plant or animal extracts or dyes that need to be fixed to a substrate to become pigments (i.e. Madder Lake). A few are organic natural earths such as Cassel earth (Van Dyke Brown). They are designated with C.I. Generic name of which consists of the usage class "Natural" and basic

**Pigment**

Pigments can be organic or Inorganic. Most modern pigments are given this usage designation by the Color Index. They can be completely synthetic, naturally occurring minerals, or lakes based on the synthetic derivatives of natural dyes. Pigments are designated with C.I. Generic name which consists of the usage class "Pigment" and the basic hue followed by the CI

hue, followed by the CI serial number (i.e. Natural Brown 8). Natural pigment CI generic names are often abbreviated with the usage class N + the hue abbreviation + the serial number. (i.e. NBr 8)

NY = Natural Yellow;  
 NO = Natural Orange;  
 NR = Natural Red;  
 NV = Natural Violet;  
 NB = Natural Blue;  
 NG = Natural Green;  
 NBr = Natural Brown;  
 NBk = Natural Black;  
 NW = Natural White;

serial number (i.e. Pigment Red 106, Cadmium Red). The pigment CI generic names are often abbreviated with the usage class P + the hue abbreviation + the serial number. (i.e. PR83 for Pigment Red 83)

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

### The CI (Color Index) Common Pigment Name: [Key Top ^](#) [Page Top ^](#)

In this database the common name is the name given in the Color Index (third edition, 1997) by the [Color Index International](#) published by the [Society of Dyers and Colourists](#) and the [American Association of Textile Chemists and Colorists](#), and are also used by the [ASTM International](#), American Society for Testing and Materials.

When the Colour Index (3rd edition) has not specified a name, I have used the name that the first manufacturer, inventor or original patent holder has given that pigment. In the case of ancient pigments, historic pigments, minerals or other odd pigments, I have used the most commonly used traditional historic, mineral or chemical name as determined by my research.

### Common, Historic and Marketing Names: [Key Top ^](#) [Page Top ^](#)

These are the various names that have been used for that pigment **whether or not it is the correct usage**. This is NOT an endorsement of any particular name, but merely a collection of names that are in common usage *or have been used in the past* according to historic pigment books & references, paint sales literature, and pigment manufacturers references. They have been collected (in order of importance) from

- 1.) Paint manufacturers, pigment manufacturers and/or other pigment supplier literature;
- 2.) Various web sites in particular [AMIEN.org](#), [Dick Blick Artist Supply](#), [Handprint.com](#), [Kremer Pigments](#), [Natural Pigments](#), [Kama Pigments](#), [Sinopia Pigments](#), [PCImag.com](#) and along with internet forums on art and painting, web sites of paint manufacturers, paint suppliers, chemical manufactures and pigment manufacturers;
- 3.) The Color Index, Third edition (published by the Colour Index International, 1997);
- 4.) Historical books on pigments, oil painting, watercolor painting and other art forms ([see Free Art e-Books](#));
- 5.) Artist manuals and handbooks (see the bottom of the [Pigment Database's main page for a complete list of reference works](#));
- 6.) Various dictionaries and encyclopedias (both historic and contemporary).

(hue):

When a manufacturer has used a common historical name for a pigment that is *not* the accepted traditional historic pigment name and has not clearly indicated it to be a hue or substitute, I have indicated it with the "(hue)"\* in parenthesis. For example calling/naming a paint made with Phthalocyanine Blue as "Azure", "Smalt" or "Cobalt Blue".

\*In order to stay within ASTM specification D 4302-05, manufactures are encouraged to use the word "hue" when the paint or pigment marketing name is not the real name of a paint or a pigment. Substitute and tone could be also considered acceptable means of indicating a hue substitute for the actual color. However, the ASTM specifications are usually voluntary and there is little means to enforce them. Also because of language differences, changes in the paint or pigments common identification because of contemporary usage (often perpetrated by manufacturer's incorrect color marketing names), and last but not least - the sheer multitude of historically used paint names for any given paint/pigment, it's nearly impossible to prove or say a manufacturer of art materials is being purposely deceptive.

### C.I. Constitution Number or Colour Index Constitution Number (chemical composition): [Key Top ^](#) [Page Top ^](#)

These are the chemical constitution numbers given that pigment by the [Color Index International](#) published by the [Society of Dyers and Colourists](#) and the [American Association of Textile Chemists and Colorists](#), and are also used by the [ASTM International](#), American Society for Testing and Materials. Each of the numbers in the "Colour Index Constitution Number" has a specific chemical or compositional meaning; for more information [see the Colour Index Number Chart](#) or go to the [Color Index International](#) and [ASTM, American Society for Testing and Materials](#) web sites (these links open in a new window)..

### Chemical Composition: [Key Top ^](#) [Page Top ^](#)

These are the basic chemical names, or mineral names along with chemical composition. I have also included CAS numbers, when I can find them. Sometimes multiple names are given because chemical names can be stated in different ways and can also give an indication of the manufacture method. Very often a pigment can be a group of related compounds rather than one specific chemical. I have not included detailed chemical descriptions or analyses, but only basic information that should help you to find further information. I have included references designated with "(Ref)" where further information can be attained.

Adulterants, extenders and other additives may be added to artistic paints to improve the paint rheology, transparency, and/or drying time. Often inert pigments, extenders and fillers are added to the color pigments in student grade paints or to modify paint pigments with overly strong tinting strength, i.e. the Phthalocyanine Blues and Greens. These extra ingredients are rarely listed of the label.

Color Description: [Key Top ^](#) [Page Top^](#)

This is a general attempt to explain the hue in plain English. The perception of color is as individual as the the people viewing it and any such description can not be completely accurate, but merely give a general idea of the what color looks like to the average person. Many pigments have a range of shades and hues. This range in hues can be due to many things such as different manufacturing processes, exact chemical composition and crystal shape. In most cases, i have not used any of the attempted means of standardizing color descriptions for this (such as the [Munsell system](#)), but where the pigment is included in the [Color Index International Pigments and Solvent Dyes](#) (The Society of Dyers and Colourists, third edition 1997), I have used that description, when there is no color hue description in the Color Index, I have used other reference sources in particularly manufacturer or supplier literature.

† = Effects of long term light exposure are given when known, this may allow an artist to anticipate color changes and possibly use them as an advantage. These effects are all relative to the pigments inherent light fastness and *may take decades or even centuries in museum conditions to be visible*.

Fades = Becomes more Transparent

Lightens = Loses chroma but maintains relative transparency or opaque character;

Whitens = Becomes lighter towards white and more opaque;

Darkens = Becomes darker but retains hue;

Dulls = Loses chroma towards neutral but maintains the relative tone;

Blackens = Turns very dark or black losing chroma;

Hue shift = Changes hue towards a different color

Opacity - Transparency: [Key Top ^](#) [Page Top^](#)

This designation is only a general reference to the most common encountered opacity or transparency inherit to the pigment. In paints, the transparency of a pigment can change due to what is used as the painting medium or binder (i.e., oil color, watercolor, encaustic, acrylic, etc.). There are many pigments that are opaque in watercolor but transparent or semi-transparent in oil paints. The transparency of a paint or pigment can often be manipulated by the manufacturing process for a particular purpose. The addition of inert pigments or other modifiers can also change the perceived transparency of a paint formulation or pigment.

When available, i have used the Color index's designation or manufacturers literature to arrive at this figure. When the Color Index description is unavailable i have arrived at a general figure by manufacturer literature or personal experience. A general designation such as given will not always be the case in any particular formulation.

1 = Opaque,

2 = Semi-Opaque,

3 = Semi-Transparent,

4 = Transparent

Light Fastness Rating: [Key Top ^](#) [Page Top^](#)

The light fastness rating can only be a general guide, when available, i have used the ASTM rating or manufacturers literature to arrive at this figure. The ASTM has not rated all pigments, and I believe will no longer be rating pigments. For that reason the rating in this database will not always be the ASTM rating but a rating culled from other sources, most importantly manufactures literature. The ASTM ratings have a 5 increment scale and the blue-wool scale is 8, in this database lightfastness ratings have been condensed or averaged to a less specific 4 designations. Very often, pigments in tints are less light fast and this should be taken into account when determining if a pigment or paint will meet your needs. I can not cover every possible paint, binder, or pigment formulation in this chart as it would take too much time and space. In particular the quality of the actual pigment manufacture has much influence on a pigments fastness to light, heat and other chemicals. Additives, binder, and many other factors all have a influence on light fastness or fastness to other environmental influences. Whether a paint is watercolor, oil color, tempera, etc. has an effect on light fastness. Varnishes and other treatments to the painting surface or support can have an influence too. The only way to be sure, is to make your own tests on the paint or pigment you have. Reference the following: ([ASTM D4303 - 10, Standard Test Methods for Lightfastness of Colorants Used in Artists' Materials](#), or [ASTM D01.57, the Subcommittee on Artists' Materials doc here](#), opens new window); or this ([AMIEN.org Thread](#) - opens new window). Blue Wool Scale will be given when known, but be aware that these may be from tests on a single formulation, and may not be the same for all brands or binders.

I = Excellent,

II = Good,

III = Poor (may last many years in museum conditions, but should be used with caution for permanent works of art)

IV = Fugitive/Very Poor

BWS = Blue wool scale

7-8 = Excellent,

6 = Very Good,

4-5 = Fair (Impermanent),

2-3 Poor (fugitive),

1 = Very Poor (fugitive)\*

\*When known, blue wool scale ratings will be given for tints in the following format: Full;1/2 tint;1/4 tint (i.e. Cadmium Red would be 8;8;8 with excellent light fastness in all tints). Note: these may from tests on a single formulation or pigment brand, and may not be valid for other brands or binders.

Oil Absorption: is given in g/100g or grams of oil per 100 grams of pigment [Key Top ^](#) [Page Top^](#)  
or as H, M, L (see below)

The oil absorption figure has been arrived at from the pigment manufacturer's literature or artist reference sources (see the bottom of the [Pigment Database's main page for a complete list of reference works](#)). The higher the oil absorption, generally, the longer it will take to dry when used in oil painting. The addition of driers, siccatives, retardants and other additives can effect the drying time of any specific formulation, or they can be added by the artist to speed up or slow down the drying of oil paints. In some literature the oil absorption rate is



given as ml/100g, although not technically the same as g/100g, for the purposes of this database they are close enough.

Depending on the specifications I have available I may also use the following designations:

H = High; - These pigments absorb a lot of oil.

M = Medium; - Average drying or cure rate

L = Low; - Usually very fast driers

### Toxicity: [Key Top ^](#) [Page Top ^](#)

Under this heading will be a general designation of a possible hazard. It is assumed intelligent people will use at least ordinary care when handling all paints or pigments. The designation has been arrived at from, in most cases, the manufacturer's literature, art books and art reference works (see the bottom of the [Pigment Database's main page for a complete list of reference works](#)), MSDS sheets, the EPA manual: [Environmental Health & Safety in the Arts: A Guide for K-12 Schools, Colleges and Artisans \(full PDF here\)](#), [The Art & Creative Materials Institute, Inc. \(ACMI\)](#), The [Health and the Arts Program](#) - Great Lakes Centers at the University of Illinois at Chicago School of Public Health (UIC SPH), [The American Institute for Conservation of Historic & Artistic Works](#) has a collection of articles on art safety, The Consumer Product Safety Commission's [Art and Craft Safety Guide \(PDF, 250 KB\)](#) and [Art Materials Business Guidance](#)

All paints and especially dry pigments can be hazardous if carelessly handled, but, if handled properly with common sense all but the most dangerous pigments can be used safely. Very few pigments used in the arts are edible, and even so called "Food Colors" are not meant to be used in large quantities and may have unknown side effects or allergic reactions.

WARNING: Always use a dust mask when working with any dry pigments. Work in a separate area of your studio away from children, pets or other living things. Do not smoke, eat or drink around any art materials. Dispose of all waste materials in an environmentally safe way.

A = Low hazard, but do not handle carelessly;

B = Possible hazard if carelessly handled, ingested in large amounts or over long periods of time;

C = Hazardous, use appropriate precautions for handling toxic substances;

D = Extremely Toxic, only attempt working with these pigments (especially the dry form) in laboratory like conditions with proper safety equipment (see "[Prudent practices in the laboratory: handling and disposal of chemicals](#)" at [google books](#) opens new window); or the [PDF - Booklet Safe Handling of Colour Pigments](#) Copyright © 1995: BCMA, EPSOM, ETAD, VdMI - [link from VdMI](#)

### The Side Notes Column: [Key Top ^](#) [Page Top ^](#)

These are typically interesting things I have read, or information collected on a pigment that may be worth further study. Please remember that they are *NOT* statements of absolute fact. Many pigment qualities are rumors, old wife's tales and misconceptions repeated over and over until they accepted as fact without any scientific proof. References (Ref) may be provided for further info.

Miscellaneous:

(hue) = When the word "hue" is in parenthesis (hue), it refers to a hue color not designated on the label, when the word "hue" is *not* in parenthesis *is* part of the pigment name as per ASTM guidelines.

(Ref) = A link to a reference source. This may be the reference source of the information that I have given, or just a link to more detailed information.

? = a question mark next to a name, note, or data code indicates that it may or may not be correct information due to conflicting information, questionable references, possible typo or other discrepancies in the manufacturer or other reference documentation. Further study is needed to clarify.

### Paint or Pigment Manufacturer Code & Art Medium:\*\*\*\*\* [Key Top ^](#) [Page Top ^](#)

Paint/Pigment Manufacturer Code:

The manufacturer code is to indicate companies that make or supply paints or pigments using the particular pigment. Only those products that are single pigments will be indicated in this database. In a few cases, the Color Index International has listed a mixture of pigments or chemicals under a single color index pigment name or code, and these will also be designated as if they were a single pigment. The codes next to the pigments in above Color of Art Database may take you off sight where you can find more info or even purchase, if you so desire. These codes are not part of any standard, but were made up by me for this database, with purpose of making them as short as possible.

The links below next to the manufacturer code below are to the official manufacturer web site and will open in a new window.

AS = <a href="#">Art Spectrum</a>	DG = <a href="#">Daniel Green</a>	LB = <a href="#">Lefranc &amp; Bourgeois</a>	MW = <a href="#">Martin/F. Weber Co.</a>	SE = <a href="#">Sennelier</a>
BR = <a href="#">Blueridge</a>	EP = <a href="#">Earth Pigments</a>	LA = <a href="#">Lascaux</a>	NP = <a href="#">Natural Pigments</a>	SI = <a href="#">Sinopia</a>
BX = <a href="#">Blockx</a>	GB = <a href="#">Gamblin</a>	LQ = <a href="#">Liquitex</a>	OH = <a href="#">Old Holland</a>	SCH = <a href="#">Schmincke</a>
CAS = <a href="#">C.A.S AlkydPro</a>	GEN = Common Generic term	LK = <a href="#">Lukas</a>	PF = <a href="#">Pebeo Fragonard</a>	SCHM = <a href="#">Schmincke Mussini</a>
CH = <a href="#">Charvin</a>	GO = <a href="#">Golden</a>	MA = <a href="#">Maimeri</a>	RF = <a href="#">R&amp;F Handmade Paint</a>	SQ = <a href="#">Steven Quiller</a>
CL = <a href="#">Classic Triangle Coatings</a>	GR = <a href="#">Grumbacher</a>	MT = <a href="#">Matisse</a>	RGH = <a href="#">RGH Artists' Oil Paints</a>	TA = <a href="#">Tri-Art</a>
CR = <a href="#">Chroma</a>	GU = <a href="#">Guerra Paint &amp; Pigment</a>	MG = <a href="#">M. Graham</a>	ROSS = <a href="#">Bob Ross</a>	UT = <a href="#">Utrecht</a>
DS = <a href="#">Daniel Smith</a>	HO = <a href="#">Holbien</a>	MH = <a href="#">Michael Harding</a>	RT = <a href="#">Royal Talens</a>	VI = <a href="#">Vasari</a>
DR = <a href="#">Daler-Rowney</a>	JO = <a href="#">Jo Sonja</a>	MR = <a href="#">MIR. Jaurena Art.</a>	SH = <a href="#">Shinhan</a>	WL = <a href="#">Williamsburg</a>
DV = <a href="#">Da Vinci</a>	KA = <a href="#">Kama Pigments</a>	SV = <a href="#">Shiva</a>	WN = <a href="#">Windsor &amp; Newton</a>	YK = <a href="#">Yarka / St.Petersburg</a>
DB = <a href="#">Dick-Blick</a>	KP = <a href="#">Kremer Pigmente (USA site)</a>			

### Paint medium or binder code: [Key Top ^](#) [Page Top ^](#)

Clicking on the paint or pigment manufacturer code next to the pigment name will take you off site where more information can be found. The link will most often take you to an art supplier where you can find more specific art medium or paint binder info, purchasing source, pigment properties, pigment history, MSDS sheets, and whether it is the artist premium or student economy grade. *If you find this site helpful you can help support this site by purchasing through these links.*

*d* in *italics* next to the pigment manufacturer or art supplier code indicates a discontinued pigment or paint. All other art medium or binder codes in *italics* mean the pigment under that name is in the "student" or economy grade, not the "artist's" grade paint.

a = Acrylic Paint, heavy body;

ab = Acrylic Airbrush colors;

ad = Aqueous pigment dispersions;

af = Fluid Acrylics;

ag = Matte Acrylic or Acrylic Gouache;

ao = open acrylics or slow drying

k = Alkyd paints;

c = Casein or milk paint;

*d* = Discontinued

e = Encaustic paints;

g = Traditional water color Gouache;

i = Ink (printing ink or pigmented drawing inks);

o = Oil Paint;

p = Dry Pigment;

t = Artist Professional Tempera or Egg Tempera;

w = Watercolor Paint in tubes;

wp = Watercolor Pan; wp = 1/2 pan, wp(f) = full pan, wp(L) = large pan

wo = Water mixable oil paint or water soluble oil paint.

am = Acrylic medium, may have a wide variety of ingredients or uses

om = Oil painting Medium, may have a wide variety of ingredients or uses

wm = Watercolor Medium, may have a wide variety of ingredients or uses

GEN = Where there is a generally accepted common historic name associated with a pigment, I have used "GEN" to denote the generic or common historical name of a particular pigment.

Other than gouache, only single pigment paints and pigments are included. Gouache is designated distinct from watercolors because it is often mixed with white or additives to make it matte and/or opaque and that is not usually indicated on the paint manufactures literature. Other art material or medium forms such as pastel, oil pastels, oil bars, dyes and ceramic glazes will not be designated with a artists medium or binder code, but may still be listed under the pigment name with a company code.

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## Artist Reference Resources:

### Historical Artist and Pigment Reference Sources:

*This is just a partial list, for a more complete listing of Historical Pigment References see the [Free Art Books Page](#).*

1. [The Industrial and Artistic Technology of Paint and Varnish](#),  
By Alvah Horton Sabin, Published by J. Wiley & Sons, 1904
2. [The Painters' Encyclopaedia](#),  
By Franklin B. Gardner, Published by M.T. Richardson, 1887
3. [The Science of Painting](#),  
By Jehan Georges Vibert, Published by P. Young, 1892
4. [A Treatise on Painting](#),  
By Cennino Cennini, Giuseppe Tambroni, Mary Philadelphia Merrifield, Translated by Mary Philadelphia Merrifield, Published by Lumley, 1844
5. [A Treatise on Painting](#),  
By Leonardo Da Vinci, John Francis Rigaud, Published by J.B. Nichols and Son 1835
6. [The Book of the Art of Cennino Cennini](#),  
By Cennino Cennini, Cennini, Christiana Jane Powell Herringham, Translated by Christiana Jane Powell Herringham, Published by G. Allen & Unwin, Ltd., 1899
7. [The Chemistry of Paints and Painting](#),  
By Arthur Herbert Church, Published by Seeley, 1901
8. [A Handbook for Painters and Art Students on the Character and Use of Colours](#),

- By William J. Muckley, Published by Baillière, Tindall, and Cox, 1880
9. [The Household Cyclopedia](#),  
By Henry Hartshorne 1881
  10. [The Chemistry of Pigments](#),  
By Ernest John Parry, John Henry Coste, Published by Scott, Greenwood, 1902
  11. [Facts about Processes, Pigments and Vehicles: A Manual for Art Student](#),  
By Arthur Pillans Laurie, Published by Macmillan, 1895
  12. [The Manufacture Of Earth Colours](#);  
By DR. JOSEF BERSCH, translated by CHARLES SALTER, SCOTT, GREENWOOD & SON , 1921 [Link](#)
  13. [Materials for Permanent Painting](#),  
By Maximilian Toch 1911

#### Modern Pigment and Artist Reference Sources:

14. [The Artist's Handbook](#),  
by Pip Seymour, Arcturus Publishing (September 16, 2003)
15. [The Artist's Handbook, Revised Edition](#),  
Ray Smith; DK Publishing 2003
16. [The Artist's Handbook of Materials and Techniques](#),  
Third edition, by Ralph Mayer; Viking Press 1979
17. [Artists' Pigments: Volume 1: A Handbook of their History and Characteristics](#)  
Edited by Robert L. Feller
18. [Artists' Pigments: Volume 2: A Handbook of their History and Characteristics](#)  
Edited by Ashok Roy (Oct 2, 1993)
19. [Artists' Pigments: Volume 3: A Handbook of their History and Characteristics](#)  
Edited by Elisabeth West Fitzhugh (Oct 1997)
20. [Artists' Pigments: Volume 4: A Handbook of their History and Characteristics](#)  
Edited by Barbara Berrie (Jun 7, 2007)
21. [Collins Artist's Colour Manual](#),  
Simon Jennings; HarperCollins Publishers 2003
22. [Color Index International Pigments and Solvent Dyes](#),  
The Society of Dyers and colourists, third edition 1998
23. [A Dictionary of Art Terms and Techniques](#),  
Ralph Mayer, Harper and Row Publishers, New York, 1969
24. [The Materials and Techniques of Painting](#),  
by Jonathan Stephenson (May 1993)
25. [The Painter's Handbook](#),  
Mark David Gottsegen; Watson-Guption Publications 1993
26. [Painting Materials A Short Encyclopaedia](#),  
by Rutherford J. Gettens and George L. Stout; Dover Publications 1966
27. [Pigment Compendium](#),  
by Nicholas Eastaugh, Valentine Walsh, Tracey Chaplin, Ruth Siddall; Butterworth Heinemann 2004

#### Web Resources and Art Suppliers with Excellent Reference Materials:

28. [American Institute for Conservation of Historic and Artistic Works \(AIC\)](#):  
National membership organization in the United States dedicated to the preservation of cultural material, establishes and upholds professional standards, promoting research and publications, educational opportunities, and fostering the exchange of knowledge among conservators, allied professionals, and the public.
29. [AMIEN](#):  
a resource for artists dedicated to providing the most comprehensive, up-to-date, accurate, and unbiased factual information about artists' materials
30. [Blick Art Materials](#):  
has done a extremely thorough job of indicating the pigments used in most of the paints they sell, making the Dick Blick art supply website much more than just a store to purchase paint and art supplies.  
[Dick Blick also has the MSDS sheets](#)  
for of most of the products they sell , making the Blick site a valuable resource for toxicity info and the health and safety of artist materials.
31. [Coloria.net](#),  
a large and thorough site on pigments, in Finnish <http://www.coloria.net/index.htm>
32. [Conservation and Art Materials Encyclopedia Online \(CAMEO\)](#), [The Materials Database](#),  
developed at the Museum of Fine Arts, Boston (MFA), to be a more comprehensive and well-rounded encyclopedic resource for the art conservation and historic preservation fields. The MATERIALS database contains chemical, physical, visual, and analytical information on over 10,000 historic and contemporary materials used in the production and conservation of artistic, architectural, archaeological, and anthropological materials.
33. [Conservation OnLine \(CoOL\)](#):  
A freely accessible platform to generate and disseminate vital resources for those working to preserve cultural heritage worldwide.
34. [The Handprint.com](#):  
site by Bruce MacEvoy has loads of excellent information on [watercolor pigments](#) and [Has a excellent color wheel](#) showing where the actual pigments are in color space. Truly an awesome site, the site is directed at watercolors, but is a good general reference for any paints or pigments.
35. [Webexhibits.org](#);  
Great pigment sight that even includes step by step instructions for making you own pigments.
36. [The Real Color Wheel](#);  
by Don Jusko is also a great color site.
37. [Studiomara](#):  
has a fantastic [pigment reference database](#) sorted by the marketing paint color name and brand.
38. [Health and Safety in the Arts](#);  
A Searchable Database of Health & Safety Information for Artists
39. [Household Products Database](#);  
Health and safety information on household products from the US Department of Health and Human Services
40. [Natural Pigments](#):

One of the best sources of rare natural and historical pigments and information.

41. [Pigments and their Chemical and Artistic Properties](#); by Julie C. Sparks, is part of [The Painted Word Site](#). Wonderful stuff.
42. [Paintmaking.com](#): By Tony Johansen, Great Paint making site with all types of useful pigment and binder information for the artist.
43. [PCImag.com](#): Paint & Coatings Industry  
[2010 Additives Handbook](#) by Darlene Brezinski, Dr. Joseph V. Koleske, Robert Springate, June 4, 2010;  
[A History of Pigment Use in Western Art Part 1](#);  
[A History of Pigment Use in Western Art Part 2](#).
44. [Dick Blick Artist Supply](#):  
Full Range of art supplies at discount prices and has pigment info on most paints they sell
45. [Kremer Pigmente Europe / Kremer Pigments USA site](#):  
Has a huge amount of pigments and information.
46. [Earth Pigments](#):  
Specializes in earth pigments.
47. [Guerra Paint and Pigments](#):  
Many rare and out of production Pigments mostly in aqueous dispersions
48. [Sinopia](#):  
Lots of Pigments & info

Health and Safety in the Arts References and Info:

49. [Art and Craft Safety Guide \(PDF, 250 KB\)](#)  
Consumer Product Safety Commission
50. [Art Materials Business Guidance](#)  
Consumer Product Safety Commission
51. [Art Safety](#)  
Environmental Protection, Health & Safety, California State University at Monterey Bay
52. [Artist Safety](#)  
Center for Research on Occupational and Environmental Toxicology, Oregon Health & Science University
53. [Environmental Health & Safety in the Arts: A Guide for K-12 Schools, Colleges and Artisans](#)  
U. S. Environment Protection Agency
54. [Exposing Ourselves to Art \(PDF, 6.83 MB\)](#)  
Scott Fields. Environmental Health Perspectives Volume 105, Number 3, March 1997
55. [Health & Safety Bibliographic Resources and Resource Guides in Art Conservation](#)  
CoOL – Conservation Online, Stanford University Libraries
56. [Health and Safety Guides and Publications](#)  
American Institute for Conservation of Historic and Artistic Work
57. [Art Safety](#)  
Office of Environmental Health and Safety, Connecticut College
58. [Health and the Arts Program](#)  
The Occupational Health Service Institute, University of Illinois at Chicago
59. [Online Health and Safety in the Arts Library](#)  
The Occupational Health Service Institute, University of Illinois at Chicago
60. [Arts, Entertainment and Recreation](#)  
New York Committee for Occupational Safety and Health
61. [Studio Safety](#)  
Gamblin Artists Colors



**This page of the Color of Art Pigment Database was designed for C.I. Pigment Yellow.**

**CI Pigment Yellow is indicated with the pigment code "Pigment Yellow" followed by the color index international's pigment identification code number or pigment ID number. The full color index name or generic pigment name is usually shortened to the Color Index code which for Pigment Yellow is "PY" plus the color index # (after the "PY" Pigment Yellow code designation there is the Color index identifying number code for the specific pigment, i.e. "PY 3" or "PY 42"). All artist paints and pigments that are [ASTM International](#) (American Society for Testing and Materials) and [ASTM D4236 - 94\\*](#) compliant that are sold in the United States must have the pigment identification number or generic chemical names of the yellow pigments that were used to make the yellow paints or dry pigments (either powdered yellow pigments or in the commonly found "pigment dispersions") and**

**should be have the generic pigment name printed on the paint label. The "yellow oil paint" tube or "yellow oil color" paint label, along with the label on tubes of acrylic paints, and on the label on tubes of watercolor even when found as pans, half-pans or dry cakes and often sold as a complete color palette or "watercolor set", will have the pigment or pigments index name on the label, or printed directly on the paint tube.**

This color database is also a great pigment reference made for DIY artist's and artisans that make their own paints with raw pigments and grind or mull the pigments into homemade paints giving them complete control over the paints grind, texture, and color. Making your own paints (paint making) by mulling the pigment in with a binding medium can be a rewarding and fun creative experience. The artist is involved in the process of creation, from the beginning with only the raw dry pigments and proceeding on to grinding pigments with a binding media (usually shortened to "binder"). For making oil paints, linseed oil is the most common binder (or medium). Walnut oil is also common oil used in making oil colors in the art studio and is less yellowing than linseed oil, There are other less common drying oils and some new alkyd resins the are sometimes used in making oil colors in the studio. Making (or grinding) watercolor paint is also fun and easy. The most common formula for making homemade watercolors is mostly water with some dissolved gum arabic (the glue that holds the paint together when dry). Honey and glycerin are common additives used in varying proportions to adjust the drying time and re-wetability of the dried watercolor. See the Art is Creation [Recipe page](#) for more info and paint making or grinding medium recipes. Egg-oil tempera and other media can be made in the art studio by DIY artists and it is creative and fun to make your very own paints. It is a very rewarded creative experience to grinding (mulling) your own paints and then finally making a painting or work of art, all entirely created by the artist themselves from start to finish.

**The Art is Creation, Color of Art Pigment Database Reference has the resources and info on pigments used for artist paint, student paints, Oil color including:**

- Oil Paints
- Watercolors
- Acrylic Paint
- Pigments used in making paint
- Dry Pigments and Powders
- Aqueous Pigment Dispersions
- Fluid Acrylics
- Airbrush Paint
- Acrylic Gouache
- Matte Acrylic Paints
- Acrylic Vinyl
- Acyclic paint or Alkyd Oils
- Casein or Milk Paint
- Encaustic painting
- Gouache
- Printing Inks or Pigmented Drawing inks
- Oil sticks or Oil Bars
- Oil Base Pigment Stick
- Tempera or Egg Tempera
- Watercolor Sticks
- Watercolor Pigment Sticks or Bars
- Water mixable oil paint or water soluble oil paint