



## Mineral and Modern Pigments: Painters' Access to Color

At the heart of all of the technical information that Gamblin provides is the desire to help painters choose the materials that best support their own artistic intentions. After all, when a painting is complete, all of the intention, thought, and feeling that went into creating the work exist solely in the materials.

This issue of Studio Notes looks at Gamblin's organization of their color palette and the division of mineral and modern colors. This visual division of mineral and modern colors is unique in the art material industry, and it gives painters an insight into the makeup of pigments from which these colors are derived, as well as some practical information to help painters create their own personal color palettes.

So, without further ado, let's take a look at the Gamblin Artists Grade Color Chart:



# GAMBLIN ARTISTS OIL COLORS

## Artists Oil Colors

# mineral

THORGANIC COLORS

- All colors made from inorganic pigments from earth and metals
- High concentrations of the pigments
- High pigment load, low oil absorption
- Colors grey easily in mixtures in these are good choices for natural light painting
- Works appear with a low transparency and transparent colors

# modern

ORGANIC COLORS

- Highly transparent
- High concentrations of the pigments
- High pigment load, low oil absorption
- Best choice for high key painting, light mix
- Best colors available in a warm or cool version (ex. Phthalocyanine Green, Phthalocyanine Blue)

## white



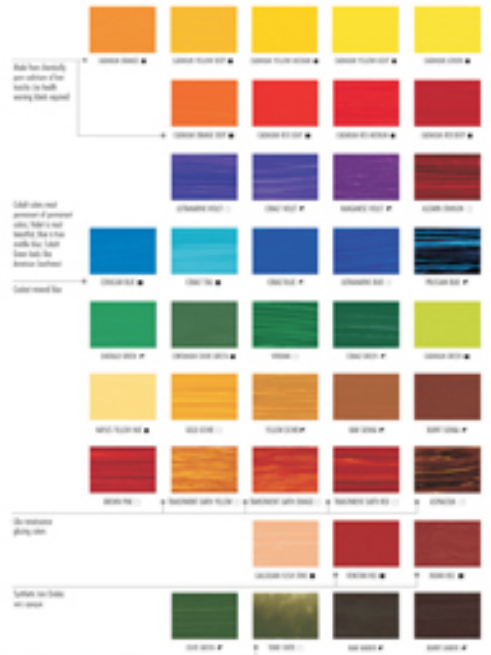
## radiant



## grey



## black



## metal

The Mineral side of the color chart includes those colors made from inorganic pigments from earth and metals. These include earth colors such as Burnt Sienna and Yellow Ochre, as well as those metal-based colors such as Cadmium Yellows and Reds and Cobalt Blue, Green, and Violet. The Modern side of the color chart is comprised of colors made from modern "organic" pigments, which have a molecular structure based on carbon. These include the "tongue-twisting" color names like Quinacridone, Phthalocyanine, and Dioxazine.

These two groups of colors have unique mixing characteristics, so this organization helps painters choose an appropriate palette for their artistic intentions.

### Eras of Pigment History

This organization of the Gamblin chart can be broken down a bit further by giving it some historical perspective based on the three main eras of pigment history – Classical, Impressionist, and Modern. As we look back throughout the history of art, paintings have always been a reflection of the materials that were available to artists.

### The Classical Palette: From Dark to Light



GAMBLIN ARTISTS OIL COLORS

mineral  
INORGANIC COLORS

modern  
ORGANIC COLORS

**white**

**radiant**

**grey**

**black**

white, radiant, grey, and black color sections with descriptive text and color swatches.

Mineral colors made from inorganic pigments. Includes text: "All colors made from inorganic pigments...".

Color swatches for mineral colors including reds, oranges, yellows, blues, greens, and greys.

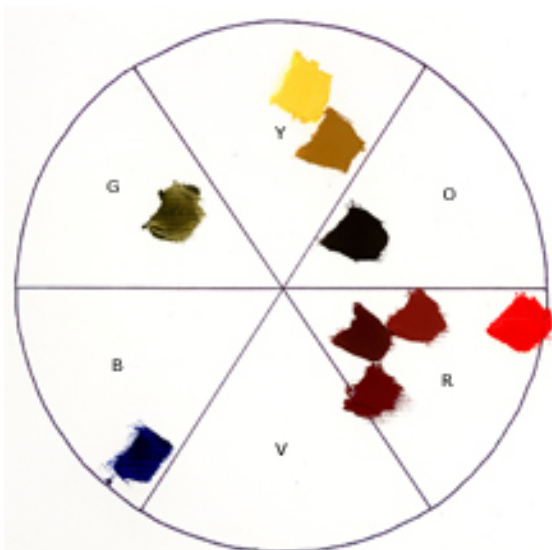
Modern colors made from organic pigments. Includes text: "Mostly transparent...".

Color swatches for modern colors including yellows, oranges, reds, blues, and greys.



metal

At the bottom of the Mineral side of the color chart is the group of earth colors that make up the heart of painters' palettes during the Classical era of pigment history. This group of pigments, which has its origins in cave painting and antiquity, was central to the oil painter's palette from the Renaissance through the Classical Era of oil painting up until the first half of the Nineteenth century. This limited range of muted earth colors exists close to the "neutral core" of [Color Space](#).



**Classical Palette in Color Space**

**Classical Palette:** Naples Yellow (Hue), Yellow Ochre, Raw Umber, Vermillion (Naphthol Scarlet shown here), Venetian Red, Burnt Sienna, Indian Red, Ultramarine Blue (lapis), and Terre Verte.

Limited to this range of the color spectrum, painters depicted form by drawing large contrasts between the darkest darks and the lightest lights, creating the chiaroscuro (literally, "light/dark") effect so characteristic of classical paintings.

### **The Impressionist Palette: A Perfect Storm and a Sea of Change in Color**

The advancements of the Industrial Revolution of the mid-nineteenth century widened the spectrum of both color and possibilities for artists. From nineteenth century onward, pigments were no longer made specifically for artists' use but for larger industrial coatings and printing industries. A new range of pigments were made by fusing inorganic materials, such as cadmium, cobalt, and chromium, together at very high heat. Not only did these colors brighten the urban centers of the Iron Age, but they widened painters' access to color compared to the palettes of the Classical Era. Other inventions of the nineteenth century such as the three-roll mill and the collapsible metal paint tube gave painters the freedom to leave the confines of their studios and paint directly from nature. At the same time, photography was threatening painting's role of reporting the visual world, and painters were revolting against the tonal traditionalists of the Parisian art academies. These factors culminated into a "perfect storm," and the result is the oeuvre from the Impressionist movement.

GAMBLIN ARTISTS COLORS

# Artists Oil Colors



**mineral**  
INORGANIC COLORS

- All colors made from Cadmium, Cobalt, and Lead.
- 100% transparent colors of the mineral series are the most brilliant and have the lowest absorption.
- Colors grey ready to mixtures as these are good choices for natural light painting.
- Ready to mix with a few semi-transparent and transparent colors.

**modern**  
ORGANIC COLORS

- Ready to mix with a few semi-transparent and transparent colors.
- Best choice for light painting, bright light.
- Best colors available in a warm or cool version (ex. Phthalocyanine Green, Phthalocyanine Blue).

**white**

**radiant**

**grey**

**black**

**metal**



The chart displays a wide range of colors, including various shades of yellow, orange, red, purple, blue, green, and grey. Each color is accompanied by its name and a small icon indicating its properties (e.g., transparent, semi-transparent, or opaque). The chart is organized into sections for different color families, with detailed mixing instructions and color theory notes provided for each.

For the first time in history, painters of this period had the pigments available to capture all of the colors of the natural world, expressed in the Impressionists' interest in pure color. The denser, tubed oil colors made from brighter and opaque pigments lent themselves to the [direct painting techniques](#) so characteristic of the Impressionists.



**Impressionist Palette:** Cadmium Yellow Light, Cadmium Yellow Deep, Cadmium Orange, Cadmium Red Light, Alizarin



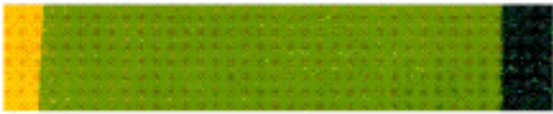


**Modern/Spectral Palette:** Hansa Yellow Light, Hansa Yellow Medium, Hansa Yellow Deep, Mono Orange, Naphthol Scarlet, Quinacridone Red, Quinacridone Violet, Dioxazine Purple, Phthalo Blue, Manganese Blue Hue, Phthalo Green, and Phthalo Emerald.

The biggest difference in the characteristics between mineral and modern colors—and arguably of most interest to painters—is how these two groups of pigments behave differently in color mixing. Below are two different reds, the mineral Cadmium Red Medium and modern Naphthol Red, each mixed with Titanium Zinc White.



As shown above, the mineral Cadmium Red Medium "greys down" and loses its intensity as it is mixed with white, compared to the modern Naphthol Red, which retains its intensity in its tint. This difference will hold up for any mineral vs. any modern color. Mineral colors, in tints, shift in VALUE and CHROMA. Modern colors shift only in VALUE and retain their high CHROMA. This difference will also hold up during color-to-color mixing:



Cadmium Yellow Medium and Viridian



Hansa Yellow Medium and Phthalo Green

Mineral colors are suitable for painters that are interested in capturing the colors of the natural world and the effects of natural light. Modern organic colors are appropriate for painters who want to make high key color mixtures. Modern colors are also more transparent, giving painters high key colors in all hue families for glazing or [indirect painting techniques](#).

As we take a look at these three color palettes representative of the three main eras of pigment history, we can easily see how advancements in pigment technology have widened painters' access to color.



Classical Color Palette



Impressionist Color Palette



Modern Color Palette

Painters today enjoy history's greatest access to stable, lightfast pigments. There is no reason for you as a painter to settle for a palette that doesn't meet your artistic intentions.

If you would like to receive our color chart or have any questions about choosing a palette of colors that meets your own artistic intentions, please feel free to [contact us](#).

Sincerely,

A handwritten signature in black ink, appearing to read 'Scott Gellatly'.

Scott Gellatly  
Product Manager



Gamblin Artists Colors Co.

**MINERAL COLORS:**

Cadmium Lemon  
Cadmium Yellow Light  
Cadmium Yellow Medium  
Cadmium Yellow Deep  
Cadmium Orange  
Cadmium Orange Deep  
Cadmium Red Light  
Cadmium Red Medium  
Cadmium Red Deep  
Alizarin Crimson  
Manganese Violet  
Cobalt Violet  
Ultramarine Violet  
Prussian Blue  
Ultramarine Blue  
Cobalt Blue  
Cobalt Teal  
Cerulean Blue  
Cadmium Green  
Cobalt Green  
Viridian  
Chromium Green Oxide  
Emerald Green  
Naples Yellow Hue  
Gold Ochre  
Yellow Ochre  
Raw Sienna  
Burnt Sienna  
Brown Pink  
Transparent Earth Yellow  
Transparent Earth Orange  
Transparent Earth Red  
Asphaltum  
Caucasian Flesh Tone  
Venetian Red  
Indian Red  
Olive Green  
Terre Verte  
Raw Umber  
Burnt Umber  
Black Spinel  
Mars Black  
Ivory Black  
Van Dyke Brown

**MODERN COLORS**

Hansa Yellow Light  
Hansa Yellow Medium  
Hansa Yellow Deep  
Indian Yellow  
Naphthol Red

Naphthol Scarlet  
Mono Orange  
Transparent Orange  
Perylene Red  
Alizarin Permanent  
Quinacridone Red  
Quinacridone Magenta  
Quinacridone Violet  
Dioxazine Purple  
Indanthrone Blue  
Phthalo Turquoise  
Phthalo Blue  
Manganese Blue Hue  
Phthalo Emerald  
Phthalo Green  
Permanent Green Light  
Sap Green  
Cerulean Blue Hue  
Chromatic Black

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