



# HOOVER COLOR

# PIGMENTS FOR WOOD STAIN

## Coloring Wood

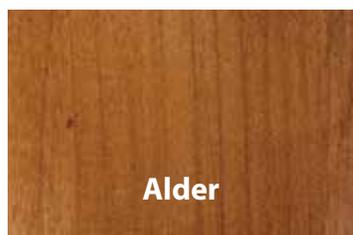
Wood is one of the world's oldest and most versatile building materials. As the evolution of applications grew, experimentation lead to the understanding that the durability of wood could be improved if it was coated to seal the fibers, creating a harder surface. Many of these protective coatings eventually moved from purely functional to also providing decorative enhancement.

Wood coatings can be clear or opaque depending on the application requirements and appearance. The beauty of wood's natural grain and coloring can be enhanced through the application of transparent stains and glazes to create simply subtle to beautifully bold highlights. The colorants in these finishes can be either dyes or transparent pigments. Most often transparent iron-oxide pigments are used because their inherent lightfastness, chemical resistance, natural color shade and ability to absorb UV light which provides protection that would normally damage most resin systems.

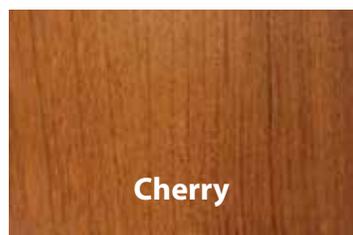
## Wood Species & Color

The wood species natural coloring will impact the final appearance. Hoover Color is the world's leader in transparent iron-oxide pigments for wood finishes and offers a full range of Umbers, Siennas, Ochres, Bone Black, Van Dyke Brown, and Transparent Red & Yellow Iron Oxides. Hoover Color produces these pigments in various quality levels. This allows our customers to select the pigment to best meet their needs.

### COLOR WILL VARY BY WOOD SPECIES (STAINED WITH 511BU BURNT UMBER)



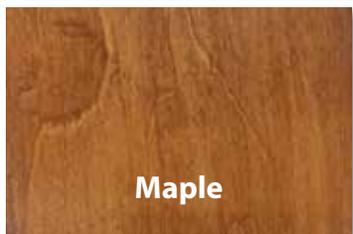
Alder



Cherry



Lindenwood



Maple

## Furniture Finish System

A high-quality furniture finish is often a system of different layers of coatings which each contribute to the final appearance. In its most basic form, these finishes consist of a sealer, colored stain and/or glaze and a clear-coat. Below is an example of a more complex furniture finish system.

### TYPICAL MULTI-STEP WOOD FINISH



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# PIGMENTS FOR WOOD STAIN

## 4-PIGMENT WOOD STAIN SYSTEM

Consumer color preferences vary individually and change over time. Many wood coatings companies utilize a color system to enable quick changes in color trends. Like printing ink, it is most commonly based on 4-core pigments - a black, brown, transparent red and transparent yellow. The example below shows a range of colors that can be produced utilizing Hoover Color's 778BN Van Dyke, 511BU Burnt Umber, BR-832M Transparent Red EnvironOxide® and BG-838M Transparent Yellow EnvironOxide®.

EnvironOxides® are the world's first sustainably produced Iron Oxide Pigments. Hoover Color utilizes a patented process that recovers iron oxides from abandoned mine drainage that can be converted into pigments while also producing clean water. It is an environmental success story that resonates with manufacturers and their customers.



778 & 511  
50/50%

838M & 832M  
85/15%

511 & 838M

Yellow  
BG-838M

Red  
BR-832M

832M & 838M  
50/50%

Uncoated Alder  
(No Coating)

778 & 832M  
50/50%

511BU

778BN

511 & 832M  
50/50%

838M & 778  
85/15%

778 & 838M  
50/50%



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Hoover Color pigments have been the industry standard since 1923. Whether you have a material or cost issue – or both - we can help. For engineered pigments with exceptional performance, quality and value, give us a call or email us today to get the conversation started. We will help you determine the right product for your specific application, and provide a sample for your evaluation.

All color images are for display purposes only. Contact Hoover Color for pigment samples. The facts and recommendations in this publication are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of accuracy is made, the product discussed being sold without WARRANTY OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE OF USE.



## Burnt Umbers

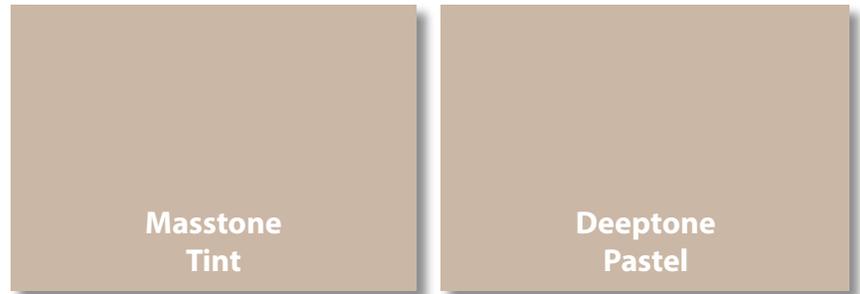
Natural Iron Oxides

Umbers are naturally occurring Iron Oxides that are highly valued for their transparency and neutral chromaticity. In their natural “crude or raw” form, their chemistry is similar to Yellow Iron Oxide. Like Yellow Iron Oxides, Raw Umbers have limited heat stability at temperatures greater than 350°F/175°C. At higher temperatures, Umbers convert to a Red Iron Oxide, Fe<sub>2</sub>O<sub>3</sub> chemical form just like a Yellow Iron Oxide. This heating conversion is normally referred to as burning, hence the term Burnt Umber.

Our Good, Better, Best material grading system is unique. While the relative differences may be minor, matching material characteristics as close as possible will ensure both excellent performance and maximum value. In some cases, using a better grade of material may be a more cost effective alternative because less is required to obtain the color you need. Once we understand your performance and cost goals, we can recommend the right product and provide a sample for your evaluation.

## Product Range

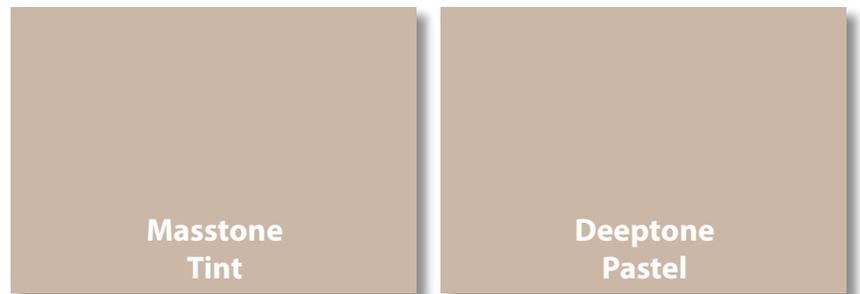
### 502BU



### 513BU



### 524BU



### General Pigment Properties

#### Burnt Umber

Crystal Structure	Hematite
Chemical Composition	Fe <sub>2</sub> O <sub>3</sub>
CAS#	12713-03-0
Color Index#	Brown 7
Light Fastness	Permanent
Chemical Resistance	Excellent
Heat Stability (°C/°F)	315°/600°

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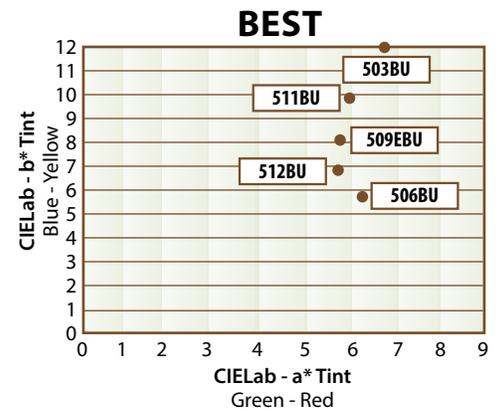
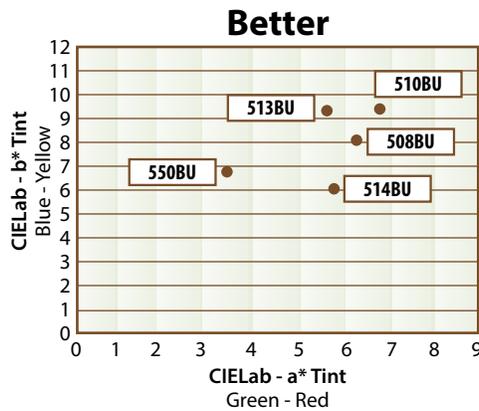
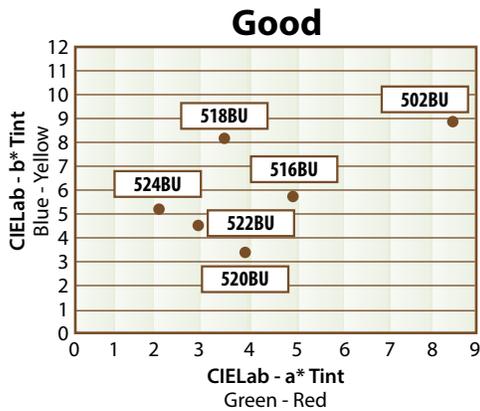
# Burnt Umbers

Natural Iron Oxides

## Choosing the Right Material

Hoover Color offers 16 standard Burnt Umbers. These grades vary in color-shade, dispersability and resulting viscosity and can be grouped into Good, Better and Best product groups, with the best being easiest to process and having the highest color strength.

Product Range	Hegman	Relative Color Strength	325 Mesh	pH	Relative Viscosity	Relative Cost
Good	4.5	100%	0.05%	8.0	100%	100%
Better	5.0	115%	0.05%	8.0	100%	100%
<b>BEST</b>	6.0	125%	0.01%	8.0	110%	110%



## Color by Application

Burnt Umbers are used in a wide range of applications. A traditional pigment for transparent wood finishes, their heat stability also allows them to be used in high-heat applications such as coil coatings and plastics. In cement based applications, Burnt Umbers produce natural tan and brown colors.

<p><b>513BU</b> Brown Paint Both Deeptone &amp; Pastel Tint</p>	<p><b>513BU</b> Tan Plastic</p>	<p><b>513BU</b> Wood Stain</p>	<p><b>513BU</b> Gray Cement</p>	<p><b>513BU</b> Stucco</p>
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# Raw Umbers

Natural Iron Oxides

Umbers are naturally occurring Iron Oxides that are highly valued for their transparency and neutral chromaticity. In their natural “crude or raw” form, their chemistry is similar to Yellow Iron Oxide. Like Yellow Iron Oxides, Raw Umbers have limited heat stability at temperatures greater than 350°F/175°C. At higher temperatures, Umbers convert to a Red Iron Oxide, Fe<sub>2</sub>O<sub>3</sub> chemical form just like a Yellow Iron Oxide. This heating conversion is normally referred to as burning, hence the term Burnt Umber.

Our Good, Better, Best material grading system is unique. While the relative differences may be minor, matching material characteristics as close as possible will ensure both excellent performance and maximum value. In some cases, using a better grade of material may be a more cost effective alternative because less is required to obtain the color you need. Once we understand your performance and cost goals, we can recommend the right product and provide a sample for your evaluation.

## Product Range

Raw Umbers are considered the “neutral toners” in a color pallet. They can soften a brighter color without deteriorating the chromaticity of the brighter pigment.

### 406RU



Masstone  
Tint



Deeptone  
Pastel

### 414RU



Masstone  
Tint



Deeptone  
Pastel

### 418RU



Masstone  
Tint



Deeptone  
Pastel

#### General Pigment Properties

##### Raw Umber

Crystal Structure	Goethite
Chemical Composition	FeO-OH
CAS#	12713-03-0
Color Index#	Brown 7
Light Fastness	Permanent
Chemical Resistance	Excellent
Heat Stability (°C/°F)	175°/350°

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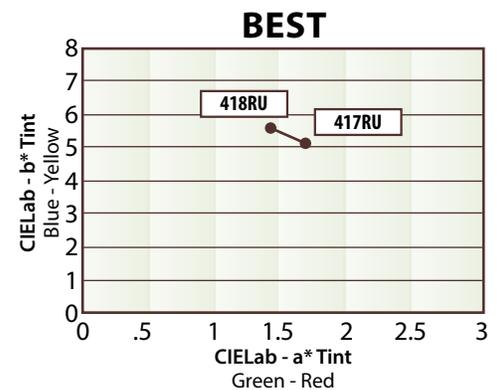
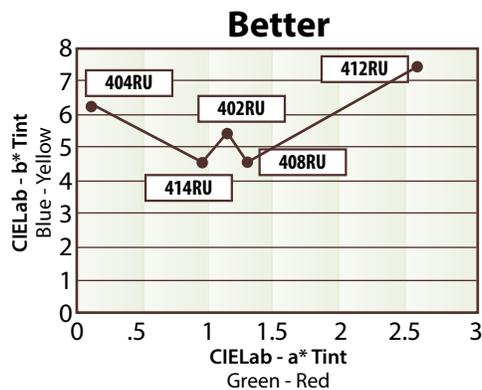
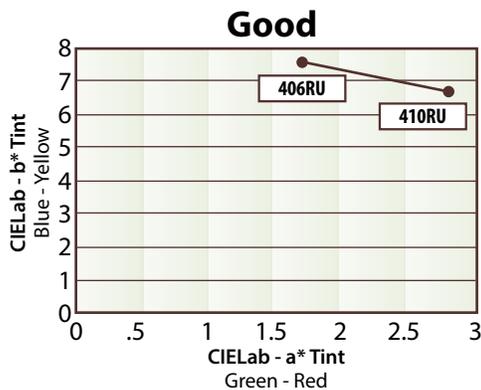
# Raw Umbers

Natural Iron Oxides

## Choosing the Right Material

Hoover Color offers 9 standard Raw Umbers. They vary in color-shade, dispersibility and resulting viscosity. While most commonly used in architectural tinting systems, Raw Umbers are used in transparent wood stains and cement based applications such as stucco.

Product Range	Hegman	Relative Color Strength	325 Mesh	pH	Relative Viscosity	Relative Cost
Good	4.5	100%	0.05%	8.5	100%	100%
Better	5.0	110%	0.05%	8.0	100%	110%
<b>BEST</b>	6.0	120%	0.02%	8.0	110%	115%



### Color by Application

As with any Iron Oxide Pigment, Raw Umbers can be used in a wide variety of coating, stain and cement applications.

**TiO<sub>2</sub>/418RU**

**408RU**

**402RU**

Paint Tint

Wood Stain

Stucco

Examples of tinting with Raw Umbers to soften brighter colors.

TiO<sub>2</sub>/Yellow 14

TiO<sub>2</sub>/Blue 15:1

TiO<sub>2</sub>/Violet 23

TiO<sub>2</sub>/Yellow 14/418RU  
Softening AAOT Yellow Tint

TiO<sub>2</sub>/Blue 15:1/418RU  
Phthalo Blue Tint

TiO<sub>2</sub>/Violet 23/418RU  
Carbasol Violet Tint

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