Color and Digital Accessibility

The University of California is committed to providing an electronic environment that is accessible to everyone, including individuals with disabilities. In digital environments, color plays a big role in accessibility — the greater the contrast, the better the readability. Following standards set by the Americans with Disabilities Act (ADA), UCSF offers edited color specifications to our master palette for optimal levels of readability across interactive deliverables.

The W3C’s Web Content Accessibility Guideline (WCAG) presents a set of color contrast standards that make content more accessible to a wider range of people with visual disabilities, including blindness and low vision. UCSF’s interactive color formulas have been created to provide opportunities for greater contrast to meet WCAG’s AA level color contrast standards. These interactive color formulas should only be used in specific interactive situations, detailed on the following pages.
The UCSF color palette offers flexibility and a range of possibility for expressing the brand through color. The palette has been customized for print and interactive applications. In general terms, the medium of a deliverable will determine which color specification to use — although elements such as logos or logo expressions should always retain the master palette color specifications. See sample uses outlined in the grid to the right. For projects that span both print and digital processes, color formulas and usage should be customized with the final use in mind.

Interactive color formulas have been developed and should be implemented for applications that will be viewed solely on a screen for internal or external audiences. Updated color specifications in this palette provide a safe contrast ratio for readability in specific type sizing while maintaining the intensity of the UCSF color palette.

<table>
<thead>
<tr>
<th>Master Color Formulas</th>
<th>Interactive Color Formulas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses include logos or logo expressions and anything printed</td>
<td>Uses include digital art</td>
</tr>
</tbody>
</table>

- All logos and lock-ups
- Editorial expressions (including those that appear within web graphics)
- Advertising that appears on digital channels owned outside of USCF (e.g., consumer advertising running on digital outdoor billboards, advertising that would be placed in external media like SF Gate)
- PPT presentations
- PDFs
- Fact sheets
- Booths or printed display/standing graphics
- Social media avatars
- Posters or flyers
- Website design elements
- Web graphics
- Web promos or banners
- Electronic newsletters or announcements
- Apps
- Digital display graphics/kiosks
Following WCAG guidance, the interactive color formulas for the UCSF color palette conform to an AA level contrast standard, which requires that color combinations meet a minimum contrast ratio for text. Below are guidelines and best practices to meet the required contrast with interactive/digital text.

### 4.5:1 Contrast Ratio
Normal-sized text in digital applications, such as 12pt text, requires a 4.5:1 contrast ratio. Type can either be on a white background or knocked out of a solid color. Only certain colors from our interactive color formulas achieve a 4.5:1 contrast ratio. For lighter colors, such as yellow and neutrals, use black text to achieve a 4.5:1 ratio.

### 3:1 Contrast Ratio
Larger text in digital applications, such as 14pt bold or 18pt regular or larger, only requires a 3:1 contrast ratio. Type can either be on a white background or knocked out of a solid color. Some of our interactive color formulas, such as green and orange, can only achieve a 3:1 contrast ratio and should not be used with normal-sized text.
Interactive Colors

The interactive color formulas provide five additional darker versions of UCSF's color palette to meet required contrast ratios. All other specifications for UCSF brand colors, tints and neutrals remain unchanged.

All of the colors and tints shown here conform to the WCAG AA level contrast standard, which requires that the color combination meets a minimum contrast ratio.

4.5:1 = normal text (12pt)
3:1 = large text (18pt or 14pt bold, or larger)

Each color formula includes relevant contrast ratio to white (#FFFFFF) or to black (#000000).

*= indicates color specific to interactive use
L=* indicates AA compliant only with large text

UCSF PRIMARY PALETTE SHOWING MODIFIED FORMULAS FOR INTERACTIVE USE

<table>
<thead>
<tr>
<th>Color Name</th>
<th>R</th>
<th>G</th>
<th>B</th>
<th>Contrast to FFFFFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pantone 7463 C</td>
<td>R5</td>
<td>G32</td>
<td>B73</td>
<td>16.04:1</td>
</tr>
<tr>
<td>AA 4.5:1 Interactive Teal</td>
<td>R5</td>
<td>G132</td>
<td>B136</td>
<td>4.6:1</td>
</tr>
<tr>
<td>AA 4.5:1 Interactive Green</td>
<td>R110</td>
<td>G164</td>
<td>B0</td>
<td>3.01:1</td>
</tr>
<tr>
<td>AA 4.5:1 Interactive Blue</td>
<td>R0</td>
<td>G124</td>
<td>B190</td>
<td>4.54:1</td>
</tr>
<tr>
<td>AA 3:1 Interactive Orange</td>
<td>R242</td>
<td>G109</td>
<td>B4</td>
<td>3.02:1</td>
</tr>
</tbody>
</table>

UCSF SECONDARY PALETTE SHOWING MODIFIED FORMULAS FOR INTERACTIVE USE

<table>
<thead>
<tr>
<th>Color Name</th>
<th>R</th>
<th>G</th>
<th>B</th>
<th>Contrast to FFFFFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pantone 2665 C</td>
<td>R113</td>
<td>G111</td>
<td>B178</td>
<td>4.5:1</td>
</tr>
<tr>
<td>AA 4.5:1 Interactive Red</td>
<td>R235</td>
<td>G9</td>
<td>B60</td>
<td>4.53:1</td>
</tr>
<tr>
<td>Pantone 123 C</td>
<td>R255</td>
<td>G221</td>
<td>B0</td>
<td>15.59:1</td>
</tr>
<tr>
<td>Pantone 427 C</td>
<td>R209</td>
<td>G211</td>
<td>B211</td>
<td>13.97:1</td>
</tr>
<tr>
<td>Pantone 428 C</td>
<td>R180</td>
<td>G185</td>
<td>B191</td>
<td>10.63:1</td>
</tr>
</tbody>
</table>

NEUTRAL PALETTE

<table>
<thead>
<tr>
<th>Color Name</th>
<th>R</th>
<th>G</th>
<th>B</th>
<th>Contrast to FFFFFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Black</td>
<td>R0</td>
<td>G0</td>
<td>B0</td>
<td>21:1</td>
</tr>
<tr>
<td>White</td>
<td>R255</td>
<td>G255</td>
<td>B255</td>
<td>21:1</td>
</tr>
<tr>
<td>Pantone 427 C</td>
<td>R209</td>
<td>G211</td>
<td>B211</td>
<td>13.97:1</td>
</tr>
<tr>
<td>Pantone 428 C</td>
<td>R180</td>
<td>G185</td>
<td>B191</td>
<td>10.63:1</td>
</tr>
</tbody>
</table>
Interactive Primary Colors and Tints

The five additional darker interactive colors complement and extend UCSF's existing color palette and tints specifically for interactive use, and meet accessibility requirements.

All of the colors and tints shown here conform to the WCAG AA level contrast standard, which requires that the color combination meets a minimum contrast ratio.

4.5:1 = normal text (12pt)
3:1 = large text (18pt or 14pt bold, or larger)

Each color formula includes relevant contrast ratio to white (#FFFFFF) or to black (#000000).

** = indicates color specific to interactive use
L = indicates AA compliant only with large text

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**INTERACTIVE PRIMARY COLORS**

<table>
<thead>
<tr>
<th>Pantone 7463 C</th>
<th>AA 4.5:1 Interactive Teal</th>
<th>AA 3:1 Interactive Green</th>
<th>AA 4.5:1 Interactive Blue</th>
<th>AA 3:1 Interactive Orange</th>
</tr>
</thead>
<tbody>
<tr>
<td>R5 G32 B73</td>
<td>R5 G132 B136</td>
<td>R110 G164 B6</td>
<td>R0 G124 B190</td>
<td>R242 G150 B4</td>
</tr>
<tr>
<td>#052049</td>
<td>#05A468</td>
<td>#AE400</td>
<td>#607C86</td>
<td>#F2C0D3</td>
</tr>
<tr>
<td></td>
<td>Contrast to FFFFFF = 4.5:1</td>
<td>Contrast to FFFFFF = 3:1</td>
<td>Contrast to FFFFFF = 4.5:1</td>
<td>Contrast to FFFFFF = 3:2:1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pantone 320 C</th>
<th>Pantone 390 C</th>
<th>Pantone Process Blue C</th>
<th>Pantone 158 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R24 G163 B172</td>
<td>R144 G189 B49</td>
<td>R23 G140 B203</td>
<td>R244 G128 B36</td>
</tr>
<tr>
<td>#18A3AC</td>
<td>#98BD31</td>
<td>#178CB6</td>
<td>#F4B024</td>
</tr>
<tr>
<td></td>
<td>Contrast to 00000 = 6.9:1</td>
<td>Contrast to 00000 = 9.5:1</td>
<td>Contrast to 00000 = 7.96:1</td>
</tr>
</tbody>
</table>

**INTERACTIVE PRIMARY TINTS – SAME AS MASTER PALETTE TINTS**

<table>
<thead>
<tr>
<th>70% Pantone 7463 C</th>
<th>70% Pantone 320 C</th>
<th>70% Pantone 390 C</th>
<th>70% Pantone Process Blue C</th>
<th>70% Pantone 158 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R80 G99 B128</td>
<td>R53 G191 B197</td>
<td>R177 G229 B111</td>
<td>R93 G175 B219</td>
<td>R247 G166 B101</td>
</tr>
<tr>
<td>#505880</td>
<td>#5DBFC5</td>
<td>#B1D16F</td>
<td>#5DAFDB</td>
<td>#F7A85</td>
</tr>
<tr>
<td>Contrast to FFFFFF = 6.11:1</td>
<td>Contrast to 00000 = 9.72:1</td>
<td>Contrast to 00000 = 12.22:1</td>
<td>Contrast to 00000 = 8.62:1</td>
<td>Contrast to 00000 = 10.6:1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>40% Pantone 7463 C</th>
<th>40% Pantone 320 C</th>
<th>40% Pantone 390 C</th>
<th>40% Pantone Process Blue C</th>
<th>40% Pantone 158 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R155 G166 B182</td>
<td>R163 G218 B222</td>
<td>R211 G228 B173</td>
<td>R162 G209 B234</td>
<td>R251 G204 B167</td>
</tr>
<tr>
<td>#9BA6B6</td>
<td>#A3DADE</td>
<td>#A3DEAAD</td>
<td>#A2D1EA</td>
<td>#BCC8A7</td>
</tr>
<tr>
<td>Contrast to 00000 = 8.52:1</td>
<td>Contrast to 00000 = 13.64:1</td>
<td>Contrast to 00000 = 15.47:1</td>
<td>Contrast to 00000 = 12.84:1</td>
<td>Contrast to 00000 = 14.3:1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10% Pantone 7463 C</th>
<th>10% Pantone 320 C</th>
<th>10% Pantone 390 C</th>
<th>10% Pantone Process Blue C</th>
<th>10% Pantone 158 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>#E6E9ED</td>
<td>#E8F6F7</td>
<td>#F4F0E4</td>
<td>#E8F6F4</td>
<td>#F8F2E9</td>
</tr>
<tr>
<td>Contrast to 00000 = 17.24:1</td>
<td>Contrast to 00000 = 18.96:1</td>
<td>Contrast to 00000 = 19.46:1</td>
<td>Contrast to 00000 = 18.75:1</td>
<td>Contrast to 00000 = 19.09:1</td>
</tr>
</tbody>
</table>
The five additional darker interactive colors complement and extend UCSF's existing color palette and tints specifically for interactive use, and meet accessibility requirements. All of the colors and tints shown here conform to the WCAG AA level contrast standard, which requires that the color combination meets a minimum contrast ratio.

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### Interactive Secondary Colors

<table>
<thead>
<tr>
<th>Color</th>
<th>Pantone 2665 C</th>
<th>Pantone 192 C</th>
<th>Pantone 123 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R113 G111 B178</td>
<td>#716FB2</td>
<td>R236 G24 B72</td>
<td>R255 G221 B60</td>
</tr>
<tr>
<td>Contrast to FF0000 = 4.63:1</td>
<td>RR95 G111 B128</td>
<td>Contrast to 000000 = 4.79:1</td>
<td>Contrast to 000000 = 15.89:1</td>
</tr>
</tbody>
</table>

### Interactive Secondary Tints – Same as Master Palette Tints

<table>
<thead>
<tr>
<th>Color</th>
<th>Pantone 2665 C</th>
<th>Pantone 192 C</th>
<th>Pantone 123 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R156 G154 B201</td>
<td>#9C9AC9</td>
<td>R242 G163 B182</td>
<td>R255 G241 B153</td>
</tr>
<tr>
<td>Contrast to 000000 = 7.88:1</td>
<td>Contrast to 000000 = 10.87:1</td>
<td>Contrast to 000000 = 18.29:1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color</th>
<th>Pantone 2665 C</th>
<th>Pantone 192 C</th>
<th>Pantone 123 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R241 G241 B247</td>
<td>#FFF0F0</td>
<td>R253 G232 B237</td>
<td>R255 G252 B230</td>
</tr>
<tr>
<td>Contrast to 000000 = 18.67:1</td>
<td>Contrast to 000000 = 17.94:1</td>
<td>Contrast to 000000 = 20.32:1</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

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**Interactive Secondary Colors and Tints**

The five additional darker interactive colors complement and extend UCSF’s existing color palette and tints specifically for interactive use, and meet accessibility requirements.

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Interactive Neutral Colors and Tints

Values for UCSF’s neutrals and tints mirror the UCSF color palette with one addition, a dark screen of black.

All of the colors and tints shown here conform to the WCAG AA level contrast standard, which requires that the color combination meets a minimum contrast ratio.

4.5:1 = normal text (12pt)
3:1 = large text (18pt or 14pt bold, or larger)

Each color formula includes relevant contrast ratio to white (#FFFFFF) or to black (#000000).

For optimal body copy readability on a white background, we recommend using either 77% Process Black or 70% Process Black for the text color. Both maintain an accessible level of contrast, but they soften the harshness of 100% black type.

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### INTERACTIVE NEUTRAL COLORS

<table>
<thead>
<tr>
<th>Process Black</th>
<th>White</th>
<th>Pantone 427 C</th>
<th>Pantone 428 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0 G0 B0 #000000</td>
<td>R255 G255 B255 #FFFFFF</td>
<td>R209 G211 B211 #010D0D</td>
<td>R180 G185 B191 #4B4B4B</td>
</tr>
<tr>
<td>Contrast to FFFFFF = 21:1</td>
<td>Contrast to 000000 = 21:1</td>
<td>Contrast to 000000 = 13.97:1</td>
<td>Contrast to 000000 = 10.63:1</td>
</tr>
</tbody>
</table>

### INTERACTIVE NEUTRAL TINTS

<table>
<thead>
<tr>
<th>77% Process Black</th>
<th>70% Process Black</th>
<th>40% Process Black</th>
<th>10% Process Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>R59 G59 B59 #3B3B3B</td>
<td>R77 G77 B77 #4D4D4D</td>
<td>R153 G153 B153 #999999</td>
<td>R239 G239 B239 #E0E0E0</td>
</tr>
<tr>
<td>Contrast to FFFFFF = 11.2:1</td>
<td>Contrast to FFFFFF = 8.45:1</td>
<td>Contrast to 000000 = 7.37:1</td>
<td>Contrast to 000000 = 16.67:1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>70% Pantone 427 C</th>
<th>70% Pantone 428 C</th>
<th>40% Pantone 427 C</th>
<th>40% Pantone 428 C</th>
<th>10% Pantone 427 C</th>
<th>10% Pantone 428 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R233 G234 B234 #D9D9D9</td>
<td>R203 G206 B210 #ACACAC</td>
<td>R237 G237 B238 #DCDCDC</td>
<td>R225 G227 B230 #E3E3E3</td>
<td>R250 G251 B251 #F4F4F4</td>
<td>R248 G248 B249 #F8F8F8</td>
</tr>
<tr>
<td>Contrast to FFFFFF = 15.88:1</td>
<td>Contrast to FFFFFF = 13.3:1</td>
<td>Contrast to 000000 = 17.95:1</td>
<td>Contrast to 000000 = 16.33:1</td>
<td>Contrast to 000000 = 20.26:1</td>
<td>Contrast to 000000 = 19.79:1</td>
</tr>
</tbody>
</table>
Using Text – Color with White

The examples on this page show which type sizes and styles meet the minimum requirements for WCAG AA level accessibility when knocked out of a solid color or on a white background. Please note that the interactive green and interactive orange colors only work in the 18pt or larger text sizes, and the 14pt bold text.
A large number of palette colors and tints are WCAG AA level compliant when used as a background for black text. The following examples show which ones meet the minimum requirements for accessibility.
A large number of palette colors and tints are WCAG AA level compliant when used as a background for black text. The following examples show which ones meet the minimum requirements for accessibility.
Neutral Colors

A large number of palette colors and tints are WCAG AA level compliant when used as a background for black text. The following examples show which ones meet the minimum requirements for accessibility.