Claims

1. A method of making an article having a desired color, the method comprising the steps of:

(a) providing a color array, said array comprising at least 36 color points, each color point having a color value, determined in accordance with the CIE (International Commission of l'Eclairage) system, each color point being independently composed of a resin mixture comprising two to seven masterbatch resins, wherein each masterbatch resin independently comprises inorganic dye particles or organic dye particles, and wherein each color point is obtained by adjusting the ratio of the two to seven masterbatch resins in the resin mixture;

(b) comparing the desired color with the color points on the color array and selecting a color point that substantially corresponds to the desired color of the article, wherein the desired color has a CIE color value, as determined by spectral reflectance or transmittance, and wherein said comparing step comprises identifying a color point having a color difference value (ΔE) with the desired color of less than 6, and wherein the selecting step optionally comprises adjusting the ratio of masterbatch resins in the resin mixture of the identified color point to achieve ΔE of between 0 to 4;

(c) preparing a resin mixture having a ΔE of between 0 to 4 relative to the desired color; and

(d) making the article using the resin mixture of step (c).

2. The method of claim 1, wherein the color array comprises at least 144 color points, each color point having a color value, determined in accordance with the CIE system.

3. The method of claim 1, wherein each resin mixture comprises three to five masterbatch resins.

4. The method of claim 1, wherein the desired color is determined based on a color of a reference object, wherein the reference object comprises a human tooth.

5. The method of claim 1, wherein the comparing step further comprises determining the CIE color values of the color points on the color array by measuring the spectral reflectance or transmittance of the color point.

6. The method of claim 5, comprising using a UV-VIS spectrophotometer in the measuring step.

7. The method of claim 1, wherein the comparing step comprises selecting a color point wherein the color difference value (ΔE) between said color point and the desired color is less than 2.

8. The method of claim 1, wherein the making step comprises using said identified resin mixture in a 3D printing process.

9. The method of claim 8, wherein the 3D printing process is selected from the group consisting of: stereolithography (SLA), Digital Light Processing (DLP), and Continuous Liquid Interface Production (CLIP).

10. The method of claim 1, wherein said article is a dental article.