What is claimed is:

1. A method comprising:

obtaining target color information for a target color;

identifying a plurality of toners and corresponding concentrations of the toners in a paint formula that can be used to produce a paint having a color that is similar to the target color within user specified acceptance criteria;

modifying the paint formula by removing one of the identified toners having a lowest concentration to produce a modified paint formula that can be used to produce a paint having a color that is similar to the target color; and

determining if the modified paint formula meets user specified acceptance criteria.

2. The method of claim 1, wherein if the modified paint formula does not meet the user specified acceptance criteria the modifying step is repeated.

3. The method of claim 1, further comprising:

reinserting the removed toner; and

removing one of the identified toners having a second lowest concentration to produce the modified paint formula.

4. The method of claim 1, wherein the target color information comprises at least one of:

reflectance, textural data, or colorimetric information.

5. The method of claim 1, wherein the target color information is obtained using a spectrophotometer or a spectrophotometer/camera combination.

6. The method of claim 1, wherein K and S values for each of the plurality of toners in the paint system and reflectance data for the target color are used in a toner identification process including a concentration loop, an adjust loop, and a solution loop.

7. The method of claim 1, wherein the identified toners do not include complementary color toners.

8. The method of claim 1, wherein the step of identifying a plurality of toners comprises:

solving a plurality of equations that use the toners to formulate and determine a quality of a match between the paint color and the target color.

9. The method of claim 1, wherein the user specified acceptance criteria comprises at least one of:

ΔE, L, a, b, C, h, X, Y, Z, opacity, and metamerism.

10. The method of claim 1, further comprising:

displaying the toners and concentrations of the toners in the second paint formula with an RGB color swatch for the target color and the paint color of the modified formulation.

11. An apparatus comprising:

a device for capturing information for a target color;

a processor for identifying a plurality of toners and corresponding concentrations of the toners in a paint formula that can be used to produce a paint having a color that is similar to the target color, removing one of the identified toners having a lowest concentration to produce a modified paint formula that can be used to produce a paint having a color that is similar to the target color, and determining if the modified paint formula meets user specified acceptance criteria; and

an output device for conveying the modified paint formulation to a user.

12. The apparatus of claim 11, wherein if the modified paint formula does not meet the user specified acceptance criteria the processor repeats the removing step.

13. The apparatus of claim 11, wherein the processor reinserts the removed toner and removes one of the identified toners having a second lowest concentration to produce the modified paint formula.

14. The apparatus of claim 11, wherein the target color information comprises at least one of:

reflectance, textural data, or colorimetric information.

15. The apparatus of claim 11, wherein the target color information is obtained using a spectrophotometer or a spectrophotometer/camera combination.

16. The apparatus of claim 11, wherein K and S values for each of the plurality of toners in the paint system and reflectance data for the target color are used in a toner selection process including a concentration loop, an adjust loop, and a solution loop.

17. The apparatus of claim 11, wherein the identified toners do not include complementary color toners.

18. The apparatus of claim 11, wherein the processor solves a plurality of equations that use the toners to formulate and determine a quality of a match between the paint color and the target color.

19. The apparatus of claim 11, wherein the user specified acceptance criteria comprises at least one of:

ΔE, L, a, b, C, h, X, Y, Z, opacity, and metamerism.

20. The apparatus of claim 11, wherein the output device displays the toners and concentrations of the toners in the modified paint formula with a RGB color swatch for the target color and the paint color of the modified formula.

What is claimed is:

1. A method comprising:

obtaining target color information for a target color;

identifying a plurality of toners and corresponding concentrations of the toners in a paint system, that includes complementary color toners, for a formula for producing a paint having a color that is similar to the target color within user specified acceptance criteria;

modifying the paint formula by removing one of the identified toners having a lowest concentration to produce a modified paint formula for producing a paint having a color that is similar to the target color, wherein the identified toners do not include complementary color toners; and

determining if the modified paint formula meets user specified acceptance criteria.

2. The method of claim 1, wherein if the modified paint formula does not meet the user specified acceptance criteria the modifying step is repeated.

3. A method comprising:

obtaining target color information for a target color;

identifying a plurality of toners and corresponding concentrations of the toners in a paint formula for producing a paint having a color that is similar to the target color within user specified acceptance criteria;

modifying the paint formula by removing one of the identified toners having a lowest concentration to produce a modified paint formula for producing a paint having a color that is similar to the target color;

determining if the modified paint formula meets user specified acceptance criteria;

reinserting the removed toner;

removing one of the identified toners having a second lowest concentration to produce the modified paint formula; and

repeating the determining step.

4. The method of claim 1, wherein the target color information comprises at least one of: reflectance, textural data, or colorimetric information.

5. The method of claim 1, wherein the target color information is obtained using a spectrophotometer or a spectrophotometer/camera combination.

6. The method of claim 1, wherein absorbance and scattering values for each of the plurality of toners in the paint system and reflectance data for the target color are used in a toner identification process including a concentration loop, an adjust loop, and a solution loop.

7. The method of claim 1, wherein the step of identifying a plurality of toners comprises:

solving a plurality of equations that use the toners to formulate and determine a quality of a match between the paint color and the target color.

8. The method of claim 1, wherein the user specified acceptance criteria comprises at least one of: reflectance, textural data, colorimetric information, opacity, and metamerism.

9. The method of claim 1, further comprising:

displaying the toners and concentrations of the toners in the modified paint formula with an RGB color swatch for the target color and the paint color of the modified formulation.

10. An apparatus comprising:

a device for capturing information for a target color;

a processor for identifying a plurality of toners and corresponding concentrations of the toners in a paint system, that includes complementary color toners, for a formula for producing a paint having a color that is similar to the target color, removing one of the identified toners having a lowest concentration to produce a modified paint formula for producing a paint having a color that is similar to the target color, wherein the identified toners do not include complementary color toners, and determining if the modified paint formula meets user specified acceptance criteria; and

an output device for conveying the modified paint formulation to a user.

11. The apparatus of claim 10, wherein if the modified paint formula does not meet the user specified acceptance criteria the processor repeats the removing step.

12. An apparatus comprising:

a device for capturing information for a target color;

a processor for identifying a plurality of toners and corresponding concentrations of the toners in a paint formula for producing a paint having a color that is similar to the target color, removing one of the identified toners having a lowest concentration to produce a modified paint formula for producing a paint having a color that is similar to the target color, wherein the identified toners do not include complementary color toners, and determining if the modified paint formula meets user specified acceptance criteria, wherein the processor reinserts the removed toner and removes one of the identified toners having a second lowest concentration to produce the modified paint formula; and

an output device for conveying the modified paint formulation to a user.

13. The apparatus of claim 10, wherein the target color information comprises at least one of: reflectance, textural data, or colorimetric information.

14. The apparatus of claim 10, wherein the target color information is obtained using a spectrophotometer or a spectrophotometer/camera combination.

15. The apparatus of claim 10, wherein absorbance and scattering values for each of the plurality of toners in the paint system and reflectance data for the target color are used in a toner selection process including a concentration loop, an adjust loop, and a solution loop.

16. The apparatus of claim 10, wherein the processor solves a plurality of equations that use the toners to formulate and determine a quality of a match between the paint color and the target color.

17. The apparatus of claim 10, wherein the user specified acceptance criteria comprises at least one of:

reflectance, textural data, colorimetric information, opacity, and metamerism.

18. The apparatus of claim 10, wherein the output device displays the toners and concentrations of the toners in the modified paint formula with a RGB color swatch for the target color and the paint color of the modified formula.