

Sample Preparation Guide for Cosmetics- Liquid Makeup & Pressed Powders

The use of a Datacolor Color Formulation System can be applied to various products in the cosmetic industry. Each of these products must be prepared in a form that can be presented to the spectrophotometer to obtain a repeatable measurement.

The quality of the results that will be obtained from the software is dependent upon:

- a) The accuracy of your laboratory procedures
- b) The ability to reproduce a sample
- c) The ability to obtain a repeatable measurement

Please take all possible precautions to insure the primary samples are correctly prepared. The following guidelines will help in that preparation. Please read them all the way through before proceeding

- a) All concentrations are percent by weight
- b) All samples should be opaque when presented to the spectrophotometer for measurement. Colorant loadings should be kept at normal levels and thickness should be increased to obtain opacity.
- c) Retain sufficient quantities of all materials to make adjustments and new formulas.
- d) The normal colorant load for the primary samples should be consistent with colorant load for the product line. All primary samples have the same colorant load.
- e) Use the same base material for each primary and the same laboratory procedures for all the samples.

Liquid Makeup Preparation

Traditionally, liquid makeup products made up of individual colorant dispersions that are each, by themselves, a complete finished liquid makeup product. This means there might be a white liquid makeup dispersion, a black one, a tan one, a yellow one, a red one, a brown one, etc. The final products manufactured by blending those colorant dispersions together to attain the desired shade.

Prepare and bring along to the user training course the following samples. Do not leave any out; you need these samples to complete the training.

Primary samples

These are used to characterize the optical behavior of each of the colorant dispersions.

White dispersion

100% White sample

Black Dispersion

100% Black sample

3% Black and 97% White

5% Black and 98% White

10% Black and 90% White

20% Black and 80% White

In addition to these samples to characterize the white and the black colorant, please prepare the following primary samples to characterize 4 additional colorants. Those colorants might be yellow, red, blue, orange, etc. Pick 4 colorants that your laboratory and production use most frequently. The 4 listed here are examples; you need to pick the 4 that you will bring along from the colorants you use there at your company.

In each of these descriptions, the word “colorant” represents each of the colorants you will be characterizing at the course

1% Colorant and 99% White
3% Colorant and 97% White
5% Colorant and 95% White
10% Colorant and 90% White
25% Colorant and 75% White
50% Colorant and 50% White
99% Colorant and 1% Black

This means for each of 4 colorants, you will produce the 7 mixtures listed above, for a total 28 samples plus the 1 for the white colorant and the 5 for the black colorant. Do not make more or less for these colorants and do not make any for any additional colorants not listed here.

Liquid makeup mixtures

In addition to the primary samples listed above, you will need to make some samples that are mixtures of those colorants. These mixtures will be used in training for standards and for batches in matching and correcting and a vital necessary part of the course materials.

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|--|--|
| A. 0.5% Black
10.0% Red
7.5% Yellow
92.0% White | B. 0.3% Black
10.7% Red
7.3% Yellow
91.7% White |
| C. 0.2% Black
8.0% Orange
0.9% Red
91.9% White | D. 0.1% Black
8.1% Orange
1.0% Red
91.8% White |
| E. 0.1% Blue
5.5% Yellow
3.6% Red
99.8% White | F. 0.1% Blue
5.4% Yellow
3.7% Red
99.8% White |

Important Note:

Of course you will use the colorants you prepared; for example, if you used something other than brown or tan, use that colorant instead. Also do not feel locked into the formula percentages shown. If these formulae would make products too light or too dark compared to your normal formulations, adjust them accordingly. Do follow the general pattern; A and B, B and C, and D and E are pairs of formulas made with the same ingredients in each pair. Their differences are minimal to approximate standard and batch variations production might have or the matching process might exhibit.

Pressed Powder Preparation

Pressed powders are usually made in a different manner than the liquid makeup. In pressed powders, you may start with a base that contains talc, titanium dioxide, and some or many other materials. To make the final product, powdered colorant dispersions are added to this base.

Here are the primary samples you need to prepare to bring along with you to the users' training course. You will characterize the optical properties of these materials with these samples.

You will need one sample of the white base with no other colorants added

You will characterize 4 other colorants for this set. Please choose 4 colorants most frequently used in the production of your pressed powder products. For each of these colorants, prepare 6 samples.

With each colorant, look at your historical use of that colorant and make those 6 mixtures cover the range from the highest amount you normally might add to that base material down to the lowest you can accurately prepare. For example, let's say for a red colorant, you might go as high as 10% red into that base and you are confident you can prepare an accurate sample as low as 0.1% into that base. Those are the two ends of the 6 concentrations. The other 4 samples should be fairly uniformly spaced between 0.1% and 10% for the red.

However, let's say for a black colorant you never go above 5% and 0.1% is still as low as you confidently can prepare a sample. Then 0.1% and 5% are the end points and the other 4 samples should be fairly uniformly spaced between those two concentrations for the black.

Pressed powder mixtures

Like the liquid makeup mixtures, these samples will be used to learn how to match and correct standards and batches in the software. Once again, like the liquid makeup, make up 3 pairs of samples, each pair contain the same base and the same combination of colorants. Let's call the 4 colorants you bring P, Q, R and S. The first pair might contain P, Q, R and the white base in each, each with slightly differing amounts of the individual colorants. Their total weights added to the white base we will leave up to you to decide.

The second pair might contain P, R, S and the white base. The third pair might contain P, Q, S and white base or Q, R, S and white base or maybe P, Q, R, S and white base. Whatever you decide, make them up along the same guidelines.

If you have any questions, please contact your Datacolor applications specialist before proceeding.