



# Accelerate Masterbatch Formulation and Cut Waste With the Right Color Solutions

Formulating a superior color match faster than the competition is the #1 priority – and challenge – facing plastic masterbatchers. With time to market expectations increasing and requests for complex color palettes and additive concentrates like flame-retardancy and UV absorbers on the rise, masterbatchers must remain nimble and precise during formulation to stay ahead of the competition.

## Challenges

Meeting these demands while formulating accurately and efficiently is crucial yet challenging. Each incorrect formulation can lead to thousands of dollars in wasted materials and time, and masterbatchers face many challenges when trying to achieve an accurate first match.

1. Vague specifications and ambiguous color descriptions can lead to multiple rounds of rework to achieve a customer's target color.
2. Back and forth review to gain approval on an acceptable color standard adds time to the process, which opens the door for a competitor to win the bid.
3. Too many formulation attempts lead to expensive colorant and resin waste.
4. Color rejections mean lost production time and materials.

## Solution

To overcome these challenges and meet the demands of their customers, masterbatchers need a complete formulation solution. X-Rite's offering includes a high-performing, repeatable benchtop spectrophotometer to objectively measure color and help them efficiently set an accurate master standard against vague specifications, formulation software to deliver fast, accurate matches, and quality assurance software to monitor, verify, and optimize the performance of all devices in the workflow to minimize imprecision and downtime.

## Results

A typical lab formulates five colors/day, mixing an initial formula and 2+ corrections to obtain the right color. Assuming each correction takes about 2 hours and material waste costs around \$100/batch, the lab can save about 2,200 hours and \$110,000 in materials annually with the X-Rite formulation solution.

\*Savings are estimates and can vary based on process and materials.

## APPLICATION BRIEF

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*"If we are building a formulation for a custom color, Color iMatch gets us 99% of the way there with accurate recipes, and guides us to making proper color adjustments for each lot."*

~ Paul Warnell, CEO, Plastic Resins INC

## How it Works

1. The customer provides a sample or requests a bid for a plastic color match.
2. The masterbatcher takes a measurement of the target color with the Ci7860 and sends the exact color data to Color iMatch.
3. Color iMatch identifies the best candidate formulas using the pigments and resins on hand and gives the option to include leftover materials to work off waste. The Search and Correct algorithm can locate past recipes in the database and identify the best candidate formulas for each color match and identifies ways to rework leftover materials
4. The masterbatcher creates a sample plaque and measures it with the Ci7860 to ensure it is within color tolerance before sending to the customer for approval.
5. The formulation is ready to send to the extruder.



## Featured Products



### Ci7000 Series Benchtop Sphere Spectrophotometers

This industry-leading series delivers the most accurate digital color standards to better communicate color specifications across the entire supply chain.



### Color iMatch Formulation Software

The matching engine in this formulation software delivers better initial matches so you can formulate matches faster and with fewer corrections needed.



### NetProfiler Quality Assurance Software

This quality assurance software verifies and optimizes performance of all connected color measurement devices, reducing variance among instruments.

## Achieve Formulation Success

Together, the X-Rite Ci7860 benchtop spectrophotometer, Color iMatch formulation software, and NetProfiler performance monitoring software can help masterbatchers meet new color trends and customer demands by capturing the most precise color data, using it to formulate and deliver the best initial matches for formulation, and ensuring all measurement devices are performing in unison.