



Antimony Color Measurement Solutions

Color Measurement for Consistent Quality, Process Control,
and Customer Confidence

Introduction

Antimony plays a critical role in modern manufacturing, supporting applications ranging from flame-retardant plastics and coatings to glass, ceramics, and specialty chemicals. As global supply chains shift and domestic production expands, manufacturers face increasing pressure to deliver consistent quality, tighter specifications, and reliable performance across every batch and production site.

In this environment, color is a key indicator of product quality—especially for materials such as antimony trioxide (ATO), where subtle changes in whiteness or tint can signal variations in purity, particle size, or processing conditions. Traditional visual evaluation is no longer sufficient to meet today's demands for repeatability and traceability.

HunterLab provides advanced color measurement solutions designed to bring objectivity, consistency, and confidence to antimony production. From raw materials through refining and downstream applications, these solutions enable manufacturers to control variability, reduce risk, and ensure their products meet both internal standards and customer expectations—every time.

Why Color Matters in Antimony

Color is more than appearance—it is a **critical quality indicator** tied directly to:

- **Purity & composition** (especially antimony trioxide - ATO)



- Particle size & processing conditions
- Oxidation state and contamination
- End-use performance in plastics, coatings, and glass

Even small color variations can result in:

- Product rejection
- Customer complaints
- Increased scrap and rework
- Brand inconsistency in downstream applications

Where HunterLab Adds Value

1. Raw Materials & Concentrates

- Monitor ore consistency and blending performance
- Identify variability before it impacts refining

2. Refining & Antimony Oxide Production (ATO)

- Control **whiteness and yellowness** of ATO
- Detect process drift in roasting and oxidation
- Ensure batch-to-batch consistency

3. Downstream Manufacturing

- Plastics (flame retardants)
- Coatings, ceramics, and glass
- Maintain **visual consistency across production lines and sites**
- Ensure products meet customer and regulatory expectations



Recommended Solutions

ColorFlex L2 - Optimized for Antimony Production Environments

Fast, Reliable Plant-Floor QC with Strong Visual Correlation

- **45°/0° Annular Geometry (Xenon Illumination)**
 - Measures color as the human eye sees it—critical for ATO whiteness and slight yellowing detection
 - Excellent agreement with visual evaluation for powders, granules, and opaque materials
 - Ideal for process control where customer acceptance is visually driven
- **Integrated Imaging for Sample Insight & Traceability**
 - Built-in camera captures sample images with each measurement
 - Enables visual verification of sample presentation (fill, texture, uniformity)
 - Supports training, troubleshooting, and audit traceability
 - Reduces operator variability in powder measurement
- **Rugged, Sealed Design for Harsh Environments**
 - Protected against dust, powders, and spills common in antimony refining and oxide handling
 - Reliable performance on the plant floor—not just in the lab
- **Simple Touchscreen Operation (No PC Required)**
 - Embedded EasyMatch Essentials L2 software
 - Fast pass/fail decisions for operators with minimal training
 - Reduces human error and improves throughput



- **High-Throughput QC for Continuous Production**
 - Rapid measurement cycles support real-time process adjustments
 - Ideal for batch and continuous ATO production environments

Enterprise Quality Control Advantage

- **EasyMatch Essentials L2 + Quality Central Integration**
 - Seamless connection from instrument → enterprise system
 - No complex setup—network-based deployment
- **Standardized Workflows Across Instruments & Sites**
 - Ensure consistent measurement methods and tolerances
 - Reduce variability between operators, shifts, and facilities
- **Centralized Data, Specifications & Reporting**
 - Real-time visibility into production quality
 - Supports SPC, LIMS integration, and audit readiness
- **Scalable to Enterprise-Wide Color Control**
 - Align global production to a single color standard
 - Critical for antimony suppliers serving plastics, coatings, and regulated industries

Why It Matters for Antimony

ColorFlex L2 delivers the speed, durability, and visual relevance required to control antimony processes in real time—while providing the data consistency and connectivity needed to scale quality across operations.



Business Impact

- **Reduce scrap and rework** through early detection of variation
- **Improve batch consistency** and process control
- **Accelerate production decisions** with real-time pass/fail results
- **Ensure customer acceptance** with objective, repeatable measurements
- **Standardize quality globally** across facilities

Why HunterLab

- Proven expertise in **powders, chemicals, and plastics**
- Solutions designed for **both lab and production environments**
- Strong visual correlation for **real-world product acceptance**
- Scalable from **single instrument QC to enterprise systems**

The Opportunity

As antimony manufacturing expands and evolves, quality expectations are increasing. HunterLab enables producers to move beyond subjective evaluation to **objective, data-driven quality control**—delivering consistency, confidence, and competitive advantage.

Contact HunterLab to evaluate your process and implement a **color measurement solution tailored to your antimony application**.