clean label PROJECT®
Clean. Pure. Science.

## CLP Insights:

# 2024-25 Protein Powder Category Report

# Introduction

The Clean Label Project was founded with a mission to uncover the hidden risks of environmental contaminants and toxins lurking in everyday products. The guiding principle is straightforward: less contamination is always better! While we know these toxins can be harmful, the long-term effects are still coming to light. That's why Clean Label Project champions urgent conversations among brands, consumers, retailers, the medical community, and regulators to tackle these critical issues. This document reveals key findings on contaminants in popular protein powders, aiming to highlight the gaps in traditional nutritional labels and set new safety standards for consumer products- redefining what safety truly means!

# Executive Summary:

## Key Data and Findings from Protein Category Insights Report

The U.S. protein supplements market surged past $9.69 billion in 2023, fueled by growing consumer demand for fitness, weight management, and general wellness products. While many assume that widely consumed protein supplements are safe, the Clean Label Project's Protein Category Insights Report highlights important data regarding potential contaminants in protein powders that consumers should be aware of. This report, which tested 160 products from 70 of the top-selling brands —representing 83% of the market— highlights concerns that challenge the current understanding of product purity.

Of the products tested, a staggering **47% exceeded California Proposition 65 safety thresholds for toxic metals.**

Organic products, on average, showed higher levels of heavy metal contamination, with three times more lead and twice the amount of cadmium compared to non-organic products.

Plant-based protein powders were particularly concerning, showing three times more lead than whey-based alternatives, and chocolate-flavored powders contained four times more lead than vanilla.

The Clean Label Project conducted over **35,862 individual tests on contaminants** including heavy metals (lead, cadmium, arsenic, mercury), and bisphenols (BPA, BPS). These chemicals, known for their potential to harm human health, can enter protein powders through environmental exposure, agricultural practices, and packaging materials. The study's findings highlight that despite the growing health-conscious market, many products may contain elevated levels of contaminants not reflected on traditional nutrition labels.

This study serves as **a wake-up call for consumers, manufacturers, retailers, and regulators** alike. With the lack of comprehensive federal regulations specifically addressing heavy metals in dietary supplements, it is critical that the industry independently takes proactive measures. Clean Label Project's findings call for a new level of transparency and stricter safety standards to protect consumers from long-term exposure to these contaminants.

This report aims to spark an important conversation about the safety of protein supplements and empower consumers to make more informed choices, while urging manufacturers to prioritize ingredient purity.
By exposing these hidden risks, Clean Label Project advocates for an industry-wide commitment to cleaner products.

# Key Data and Findings from Protein Study 2.0

**US protein supplements market size surpassed**

## $9.69 billion (USD) in 2023

We tested **70** of the top brands & **160** products representing **83%** market share

**47%**
Products exceeded federal or state regulatory set for safety

**77%**
Plant-based Protein Powders tested over Prop 65 for Lead

**79%**
Organic Protein Powders tested over Prop 65 for Lead

**41%**
Organic Protein Powders tested over 2X Prop 65 for Lead

**21%**
Products tested over 2X Prop 65 for Lead

**28%**
Whey Protein Powders tested over Prop 65 for Lead

**26%**
Collagen Protein Powders over Prop 65 for Lead

**65%**
of Chocolate Protein Powders tested over Prop 65 for Lead

**29%**
of Chocolate Protein Powders tested over 2X Prop 65 for Lead

**258**
**different chemicals and heavy metals tested**

**35,862**
**Number of total analysis**

## Panels Tested:

- Bisphenols
- Heavy Metals

Fortune Business Insights. (2024, October 12). U.S. Protein Supplements Market Size, Share & Industry Analysis, By Product (Protein Powder, RTD, Protein Bars, and Others), By Source (Plant-Based and Animal-Based), and By Distribution Channel (Specialty Stores, Online Stores, and Others), and Country Forecast, 2024-2032. Fortune Business Insights. https://www.fortunebusinessinsights.com/u-s-protein-supplements-market-107171

# Why Protein Powder?

Protein powder is one of the most popular dietary supplements in the U.S., generating **$9 billion in 2023**. While people use it for muscle gain, weight loss, endurance, or general health, they all complement and supplement their already healthy lifestyle choices and have certain safety and quality expectations. At Clean Label Project, rather than accepting safety as a given, we rely on data and science to reveal the truth behind what consumers are really ingesting, focusing on ensuring transparency and safety in the market

# What was the Clean Label Project's Methodology?

Clean Label Project purchased and rigorously **tested 160 of the top-selling protein powders, sourced from Nielsen and Amazon's best-seller lists,** and supplemented with top products from the natural and organic marketplace. It also assessed multiple panels of industrial and environmental contaminants. Collaborating with an analytical chemistry lab, Clean Label Project amassed 35,862 data points from 70 brands and 160 products to benchmark the findings.

# What Contaminants Were Found in Clean Label Project's Protein Powder Study?

Protein powders tested by Clean Label Project had an array of positive results for levels of arsenic, cadmium, lead, and mercury. However 47% of products exceeded at least one federal or state regulatory set for safety, including CA Prop 65, and 21% of the samples were over 2X CA Prop 65 levels.

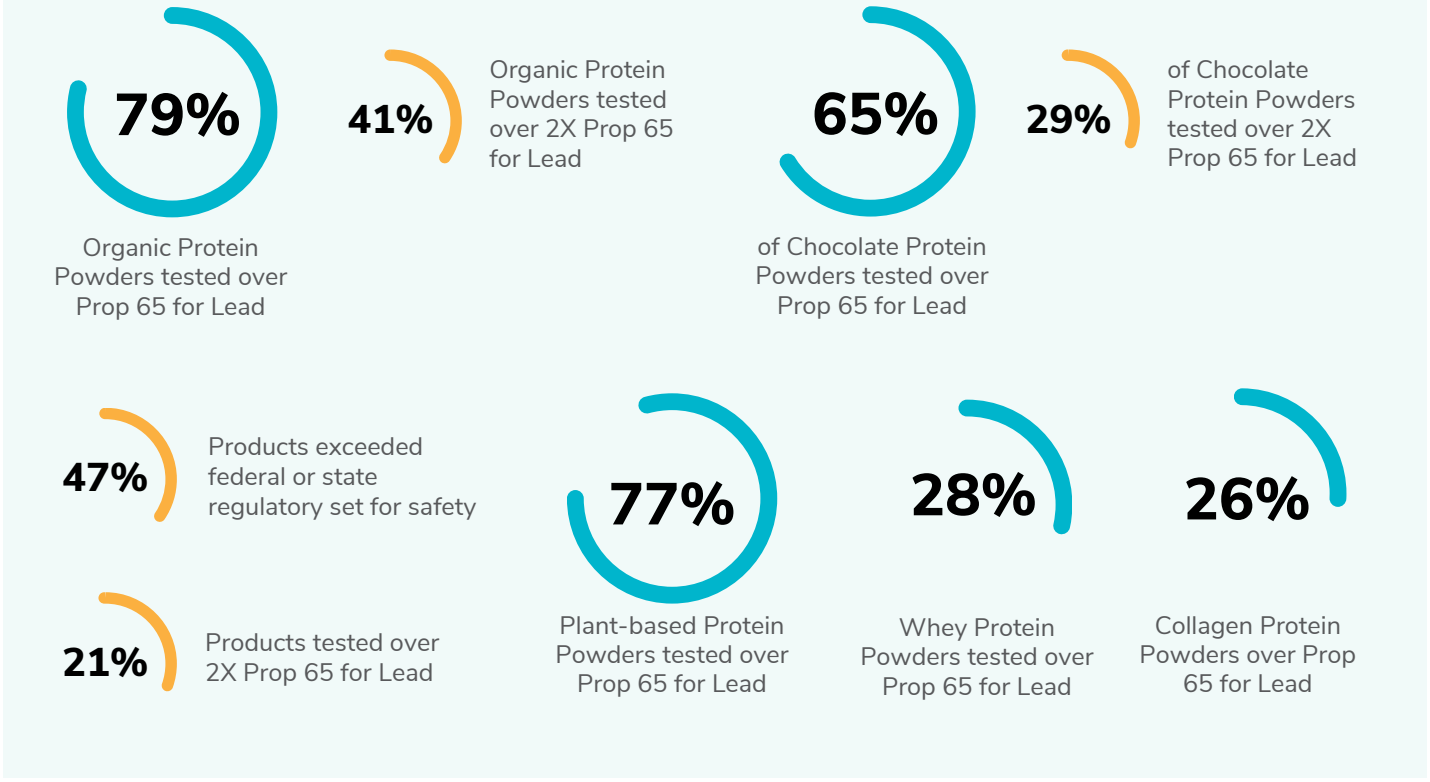
**- Heavy metals, such as arsenic, lead, mercury, and cadmium, are naturally occurring elements found in the Earth's crust.**

They enter the environment through natural processes like volcanic eruptions, weathering of rocks, and soil erosion. Over time, they accumulate in air, water, and soil, where they can make their way into plants, animals, and eventually into human food sources.

Though naturally occurring, the concentration of these metals can increase due to human activities such as mining, industrial processes, and agricultural practices, leading to higher exposure risks in food products. Given the absence of federal regulations that require proactive testing to minimize the introduction into finished products, they can be unintentionally introduced into all foods and consumer products.

Interestingly, certified organic products were found to have, on average, three times the lead compared to non-organic products. This was largely due to plant-based protein powders, which tend to contain higher levels of contaminants. Our studies continue to report chocolate as a high risk ingredient.

**- 65% of Chocolate Protein Powders tested over Prop 65 levels and 29% tested over 2X Prop 65.**



Bisphenols, including BPA and BPS, are well-known endocrine disruptors with significant health risks. Research has shown that BPA can interfere with insulin tolerance, potentially undermining athletic training efforts for those using protein powders (Moon et al., 2015). Additionally, BPA is linked to metabolic issues, increasing the risk of type II diabetes (Le Magueresse-Battistoni et al., 2018). Fortunately, Clean Label Project's 2023-2024 study found a significant improvement from 2018, with BPA and BPS detected in only 3 of 160 protein powder products, compared to 55% in previous tests.

Plant-based protein powders were the most contaminated, containing five times more cadmium than their whey-based counterparts. Even the flavor of protein powder played a significant role in contamination levels. Chocolate protein powders, for instance, were found to have a staggering 110 times more cadmium [1] than vanilla-flavored varieties. Meanwhile, whey-based protein powders generally showed much lower contaminant levels, highlighting the variability in product safety depending on the protein source and flavoring.

## Aren't These Contaminants Regulated?

Surprisingly, there are **no comprehensive federal regulations** specifically targeting dietary exposure to heavy metals in food, with most safety efforts focused on physical and microbiological contaminants. However, recent discussions in Congress and the FDA are pushing for stricter standards on heavy metals and industrial chemicals in food products.

States like California have created regulations, like Prop 65 that we reference. Prop 65 requires businesses to provide warnings about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm.
CA and MD have led the charge with **transparency** laws for heavy metals in baby food (**CA AB899** & **MD SB723**).

# Where are These Contaminants Coming From?

The two primary sources of contaminants in protein powders are the contaminated soils where ingredients are grown and the packaging used for these products. At the agricultural level, companies can hold suppliers accountable to minimize pesticide and soil contamination during the growth cycle of their ingredients. However, the good news is that packaging has seen significant improvements in terms of BPA content. Clean Label Project's testing indicates that BPA has been nearly eliminated from packaging, reflecting the industry's response to consumer demand and controversy surrounding this chemical.

# How Does Clean Label Project Measure These Contaminants?

Clean Label Project contracted an independent analytical chemistry laboratory, Ellipse Analytics, to test 6 industrial chemical panels, including heavy metals and BPA.

The heavy metals, arsenic, cadmium, lead, and mercury, were tested by Inductively Couple Plasma – Mass Spectroscopy (ICP-MS). Bisphenols and pesticides are tested by Liquid Chromatography – Tandem Mass Spectroscopy (LC-MS/MS).

# What Should Content-Conscious Consumers Look For?

Our mission is to empower consumers to see beyond flashy marketing. When it comes to selecting low-contaminant options, our findings reveal that plant-based protein powders generally had the highest levels of detected contaminants, while whey-based protein powders consistently demonstrated lower levels.

The data, from this protein study, enables consumers to make informed choices that prioritize safety and quality in their dietary supplements. Based on our study, the products with the least lead are whey or collagen based protein powders that are not chocolate flavored.

## The following companies have protein powders that are Clean Label Project Certified:

For a full list of products Clean Label Project evaluated, please visit the website at **www.cleanlabelproject.org**

> *"The food industry owes their customers an open, honest, and transparent view of how clean their ingredients are," explains Jaclyn Bowen from Clean Label Project. "Consumers are purchasing supplement and protein products for health and performance, they expect the products to be clean."*

**Transparency** laws like CA AB899 and Maryland "Rudy Law" is the future for consumer trust and industry change. Clean Label Project has a Transparency certification that displays the results of all certified brands lots providing consumers with the confidence to make the right informed decisions. We believe that there is a growing concern about food and supplement safety and a growing demand for transparency.

Currently only one protein company, Puori, is certified to Clean Label Project Transparency Certification but we encourage more brands to seek Transparency Certification providing consumers with the trust they deserve. https://cleanlabelproject.org/transparency-project/

# Our Mission

Clean Label Project™ is a national non-profit with the mission to bring truth and transparency to food and consumer product labeling. The foundation of food and consumer product safety in America is primarily focused on pathogen and microbiological contaminants. However, there is an increase in consumer, media, and academic attention being paid to the health consequences of exposure to heavy metals, pesticide residues, and plasticizers. Yet, consumers will never find this information on product labels. We are committed to changing the definition of food and consumer safety through the use of data, science, and transparency. We award brands with products that place an emphasized focus on purity and surpass the minimum regulations required by FDA. At Clean Label Project, we encourage brands to join us in becoming part of the solution to address the growing consumer concern of industrial & environmental contaminants and toxins in both food and consumer products.

# Clean Label Project Certification

Food and consumer product safety regulatory fabric in America is largely focused on pathogen & microbiological contaminants. For categories where Clean Label Project does not have benchmarked data to warrant a Clean Label Project Purity Award, Clean Label Project borrows a page out the State of California Office of Environmental Health Hazard Assessment Safe Drinking Water and Toxic Enforcement Act of 1986. Informally known as Proposition 65, this regulation was enacted as a ballot initiative in November 1986. It considered the strictest regulation in the country when it comes to protecting consumers from industrial & environmental contaminants and chemicals of concern. Proposition 65 aims to protect the state's drinking water sources from being contaminated with chemicals known to cause cancer, birth defects or other reproductive harm, and requires businesses to inform Californians about exposures to such chemicals.

# Clean Label Transparency Project Certification

The foundation of the Clean Label Transparency Project is compliance with the Clean Label Project Purity Award. The Clean Label Project Purity Award evaluates products for substances that would never be found on a product label. These substances include chemicals of concern and industrial and environmental toxins and contaminants (like heavy metals, pesticide residues, and plasticizers) that have the long-term potential to adversely affect health and well-being. Clean Label Transparency Project gives brands an opportunity to use a QR code or tracking number on product packaging. This gives consumers an opportunity to look into the details of the testing and evaluation process.

# Purity Award

Let's face it, marketing departments do an effective job at selling comfort and security. The Clean Label Project Purity Award evaluates products for substances that would never be found on a product label. These substances include chemicals of concern and industrial and environmental toxins and contaminants (like heavy metals, pesticide residues, and plasticizers) that have the long-term potential to adversely affect health and well-being. Clean Label Project uses benchmarked data to compare individual product test results to the test results of the best-selling products in the same product category. In the process, we reveal to brands how their ingredient supply chain and quality assurance systems fare compared to industry leaders. We reveal to consumers what brands are taking the extra steps to minimize consumer exposure to known chemicals of concern.

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