

# Cooper Standard Deploys Unified Lab Informatics Platform to Synchronize R&D

Cooper Standard engaged Uncountable to help formulate a new rubber compound with extreme physical property requirements from a pool of seldom-used and new ingredients.

## THE NEED:

- End-product specifications required performance across 16 different physical properties
- Typical rubber compounds have 10-12 components, including active chemistries like cross-linkers, selected from 25 potential ingredients.

## THE SOLUTION:

- Uncountable used its AI platform to suggest new formulations to Cooper Standard using its 3-step process.

- **Step 1:** Ingest historical recipes with experimental data and set the objective function for the new material.
- **Step 2:** Build a custom Machine Learning model that learns ingredient interactions and encodes the chemist's prior knowledge of the material space into the model. Then, the Artificial Intelligence engine will be used to suggest the best possible formulations.
- **Step 3:** Incorporate experimental results from Uncountable suggestions to continuously improve the model and suggest the next round of formulations to test. Iterate step 3 until the objective is complete.



### Customer Profile:

- **Cooper Standard:** (NYSE: CPS)
- **Market Cap:** \$2.1B USD
- **Employees:** 30,000+

Cooper Standard is a leading global supplier of systems and components for the automotive industry. Products include rubber and plastic sealing, fuel and brake lines, fluid transfer hoses, and anti-vibration systems.

## KEY RESULTS

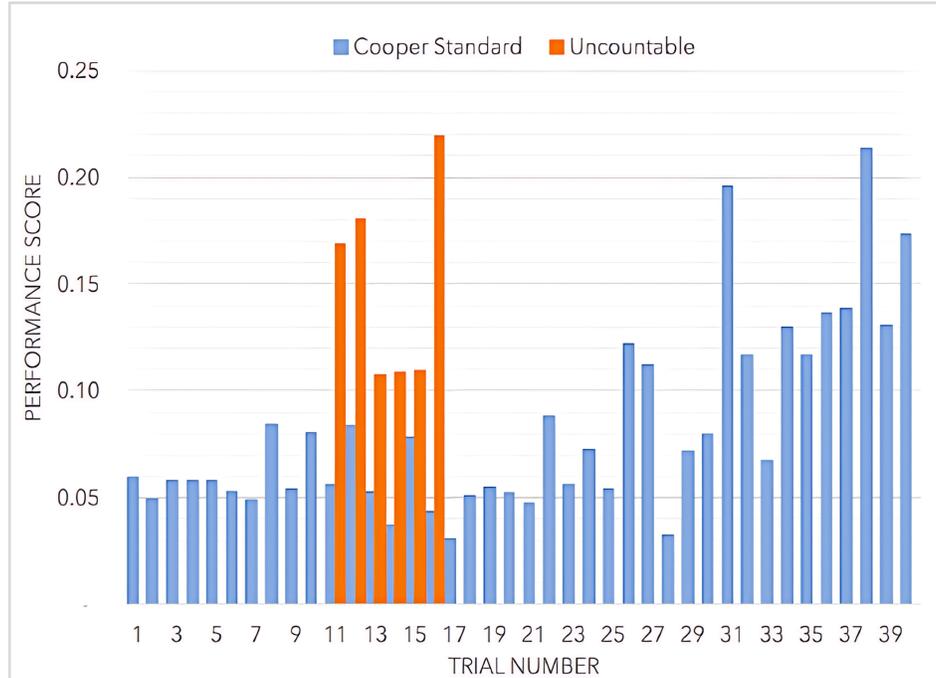
**2.5x Reduction in Testing Time & 2.5x Reduction in Experimental Trials**

*“Uncountable was able to identify novel compounds that were outside of our normal box of experimentation and delivered significant performance improvements.”*

**Chris Couch** | VP of Innovation and Product Groups | **Cooper Standard**



## COOPER STANDARD SEES SIGNIFICANT IMPROVEMENT IN 50% FEWER TRIALS



*The “performance score” is a weighted average of the measured values of all 16 properties to be optimized. A higher score indicates better performance.*

Cooper Standard tested 40 formulations (blue bars) using partial factorial DOEs.

Uncountable used only the first 10 experiments as training data to backtest the Uncountable approach as a head-to-head comparison.

The A.I. engine suggested 6 new formulations, which Cooper Standard mixed and tested. The results are displayed to the right (orange bars).

One of Uncountable’s experiments (orange bars) exceeded the performance level seen in the first 40 experiments conducted by Cooper Standard.

### ABOUT UNCOUNTABLE: ALL-IN-ONE R&D PLATFORM

Uncountable’s platform provides scientists and formulators a tool that intuitively connects all of the factors under consideration during product development: from raw materials and regulatory requirements or cost to the formulations and processing and, finally, all product testing requirements. Product developers can quickly search, analyze, visualize, and model their development data without writing code or complicated scripts. To learn more, visit our website: [www.uncountable.com](http://www.uncountable.com)