CAS CUSTOM SERVICES℠

ADVANCED FILTER AND SEARCH CAPABILITIES ENABLE THE INSTANT IDENTIFICATION OF IDEAL CANDIDATES

Solution success story



The challenge: Weeks of searching for suitable compounds

Each of the world's 100+ million known chemicals has unique properties, safety, and utility, making it a monumental task to search materials for specific structures, features, performance, and environmental impact.

Dow sought to replace a digester aid with one that was free of Environmental Health and Safety concerns while maintaining or increasing pulp yield. More than 250 million molecular candidates needed to be screened by seven chemical, physical, hazard, and economic criteria. The screening was a weeks-long manual process. Searches required sifting through countless results and using intuition to make complex scientific connections among similar compounds on a variety of facets. Some searches were too cumbersome to even consider.

The solution: Instantly identify and prioritize ideal compounds for R&D innovation

Dow partnered with CAS to create Smart Search. Now, even the most complicated searches can be done in minutes by specialized technologies that can extract a multitude of attributes about a complex compound and its 3D structure with precision and specificity, quickly identifying ideal candidates for testing and accelerating innovation.

Simultaneously filtering on various requirements is estimated by Dow researchers to be 100 times faster than sequential searching. Researchers can search by properties, structures, hazard phrases, and commercial availability, which helps them select the most sustainable materials to meet their performance needs. Researchers can quickly identify replacements with improved hazard profiles for substances of concern. Dow was able to narrow the 250 million molecular candidates down to 12 in a fraction of the time.

The tool utilizes the technology and content that underpin the CAS scientific information solutions relied on by millions of researchers worldwide. This elegant design lowers the learning and change management curves while providing an extremely powerful new capability that dramatically improves both the speed and efficiency of scientific discovery.

With millions of materials to choose from, compounds with key metrics can be identified in a matter of seconds. Prioritizing the most promising leads for experimental testing reduces lab work, saving additional time and reducing waste.

The result of a collaboration between Dow and CAS, this tool will lead to better, quicker solutions in industrial and agricultural chemistry, catalysis, drug discovery, and other areas.

CAS
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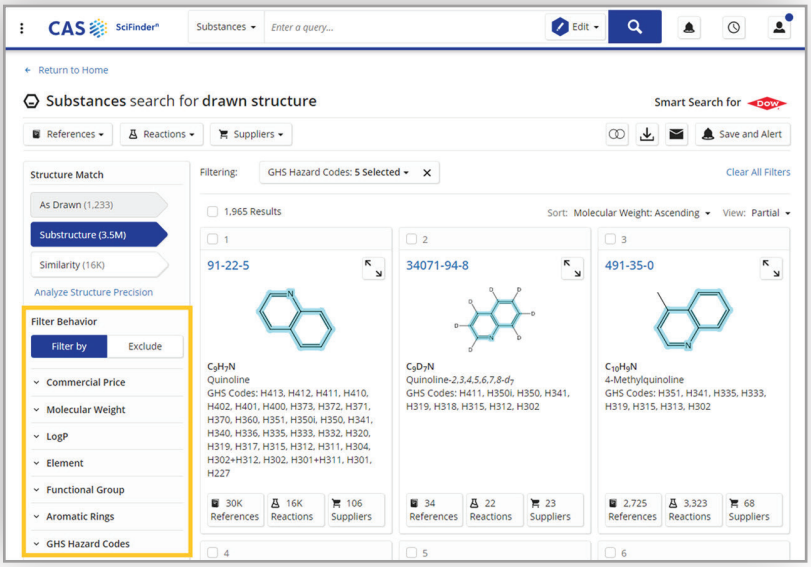
"This solution is going to be a revolution in how people search molecules and molecular properties in the chemical industry and is going to accelerate innovation across a number of sub-industries and markets."

Nathan Wilmot, R&D Director,
Information Research, DOW

"Searching is now 100 times faster than the traditional method."

Estimate by Dow researchers

Intuitive filters allow Dow researchers to quickly identify materials.



Find out how CAS Custom Services can help you transform scientific data into actionable, evidence-based insights that maximize investment and fuel success at **cas.org.**

EDISON AWARDS GOLD 2023 WINNER

CIO 100 WINNER 2023 USA

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