

FLEXSYS ANNOUNCES IT HAS DEVELOPED THE WORLD'S FIRST VIABLE ALTERNATIVE TO 6PPD FOR USE IN TIRES

Findings Reflect Extensive Early Testing on Performance and Environmental Impact, in Collaboration with Technical Experts and Tire Industry Leaders

AKRON, Ohio — November 18, 2025 — Flexsys, a global leader in advanced tire additives and material-science solutions, today announced that it has developed the industry's first viable alternative to 6PPD. This alternative chemistry, the result of years of intensive research by Flexsys' world-class innovation team and extensive collaboration with highly regarded federal and independent research laboratories, is designed to meet the rigorous technical and toxicological requirements to replace 6PPD.

Immediately after the identification of 6PPD-quinone in 2020, a transformation product produced from the use of 6PPD in tires, Flexsys set out to develop a high-performance, scalable and cost-effective replacement for 6PPD – a chemical that has been the global industry standard antidegradant used in all tires for the last 50 years.

Extensive testing, conducted at Flexsys' world-class innovation center, at independent third-party laboratories and with tire industry partners to evaluate against high-level performance requirements, indicates Flexsys' replacement chemistry is on track to meet all of our ambitious initial targets, including:

- Providing short- and long-term protection to tires against degradation - meeting the high safety standards and long service lifetime required by the tire industry.
- Minimizing changes to rubber compound formulations when substituting the new chemistry, facilitating accelerated adoption of the new chemical.
- Meeting applicable environmental and regulatory benchmarks, including the 6PPD Alternatives Assessment Hazard Criteria developed by the Washington State Department of Ecology.
- Relying on chemistry outside the "PPD" family that does not form "quinone" during use, thus eliminating the impact of quinone on the environment entirely.
- With an eye to supporting rapid adoption of this solution, using substantially the same intermediate chemistry as is used to produce 6PPD today. This can allow the industry to continue using existing chemical manufacturing assets, increasing adoption speed and reducing total investment cost.

In summary, unlike other attempts across the industry to eliminate 6PPD to date with nascent research on viability, Flexsys' extensive testing indicates it will achieve its targets allowing 6PPD to be replaced at a rapid pace, meet tire safety standards, comply with environmental regulations and requirements, and support the sustainability goals of automakers and tire manufacturers.

"This achievement reflects our unwavering commitment to responsible innovation, built on decades of expertise in tire protection chemistry," said Carl Brech, Chief Executive Officer of Flexsys. "Our solution is formulated to deliver the performance and reliability that tire makers expect and is designed for future environmental and regulatory standards."

Addressing a Known Industry Challenge

For 50 years, 6PPD has been the industry standard for protecting tires from cracking and degradation. Studies published in 2020 indicated that a 6PPD transformation product 6PPD-quinone can pose risks to aquatic species, particularly coho salmon. This discovery prompted tire manufacturers and regulators globally to seek alternatives addressing environmental concerns. Flexsys' newly developed solution is poised to meet that need.

"Our team set out to develop a next-generation antidegradant that meets the tire industry's highest performance standards without compromising tire safety, while also reducing toxicity," said Neil Smith, Chief Technology and Sustainability Officer. "I could not be more proud of the perseverance and dedication of the Flexsys R&D team. Our group has been highly motivated by both the technical challenges of this project as well as the positive societal impact that this work will ultimately have."

Flexsys gratefully acknowledges the Akron, Ohio-based Sustainable Polymers Tech Hub and the Akron Polymer Industry Cluster for their partnership. The Tech Hub is part of the U.S. Economic Development Administration (EDA) Tech Hubs Program and seeks to advance global materials development and reshore supply chains by commercializing new polymer technologies.

Moving Toward Commercialization

Building on successful collaborations with tire industry partners to date on testing, adoption and roll-out, Flexsys is now turning its attention to optimizing the process chemistry to allow for efficient world-scale production. The Company is also continuing its work with regulatory agencies globally to have the new chemistry fully approved for commercial use, with research across both safety and performance, and environmental impact.

"Flexsys is helping set the direction of the tire industry for the coming decades with this development," said Brech. "We will continue to work tirelessly to bring this breakthrough to the market as soon as possible."

Upcoming Public Forum

Smith will discuss these Flexsys industry-first developments, distinguishing partnerships and extensive research to date at the Washington State Department of Ecology's "6PPD State of the Science" virtual forum on December 10, 2025. For more information on the conference and how to attend, please visit https://waecy-wa-gov.zoom.us/webinar/register/WN_267QJcJFSMq8s-55e1MTTw#/registration.

Disclaimer

Flexsys is committed to achieving all its goals described in this press release, but there can be no guarantee that this alternative chemistry will be rapidly adopted (or at all), commercialized or that it will receive all required certifications and approvals.

About Flexsys

Flexsys is a global leader in advanced material-science solutions for the rubber and tire industry. Building on decades of chemistry and innovation expertise, the company develops and manufactures high-performance vulcanization, stabilization, and protection systems that enhance the durability, safety, and environmental performance of rubber products. Its portfolio includes Crystex™ vulcanizing agents, Santoflex™ antidegradants, and Duralink™ HTS post-vulcanization stabilizers.

Operating across four continents with seven manufacturing facilities, a technology center in Akron, Ohio, Flexsys continues to pioneer next-generation solutions that drive performance and sustainability across the global tire industry.

For more information, please visit www.flexsys.com.

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