

## Petroleum Based Dyes

The U.S. is actively phasing out petroleum-based synthetic dyes in food, driven by health concerns, particularly for children. The Department of Health and Human Services (HHS) and the Food and Drug Administration (FDA) announced measures in April 2025 to eliminate these dyes from the nation's food supply by the end of 2026. Key actions include:

- **Revoking Authorization:** The FDA is initiating processes to revoke approval for two synthetic dyes, Citrus Red No. 2 and Orange B, within months. Six other dyes—FD&C Green No. 3, Red No. 40, Yellow No. 5, Yellow No. 6, Blue No. 1, and Blue No. 2—are targeted for removal by the end of 2026.
- **Accelerating Natural Alternatives:** The FDA is fast-tracking approval of four natural color additives (calcium phosphate, Galdieria extract blue, gardenia blue, and butterfly pea flower extract) and reviewing others to replace synthetic dyes.
- **Red Dye No. 3 Ban:** Already banned in January 2025 due to cancer links, with deadlines for removal from food by January 2027 and medications by January 2028. The FDA is pushing for faster compliance.
- **Industry Collaboration:** The FDA is working with food companies to transition to natural alternatives, as seen in Europe and Canada, where plant-based colorings like beet or carrot extracts are used. No formal ban exists, but there's an "understanding" with industry to comply.

### Health Concerns:

Studies, like a 2021 California Office of Environmental Health Hazard Assessment report, link synthetic dyes to neurobehavioral issues in some children, such as hyperactivity, and potential carcinogenic risks from contaminants like benzidine. Red No. 40, Yellow No. 5, and Yellow No. 6 dominate usage, raising scrutiny due to their prevalence in candies, cereals, and beverages.

### Global Context:

Europe and Canada already use natural dyes in many products, and some U.S. states, like California and West Virginia, have passed dye bans. The push aligns with the "Make America Healthy Again" initiative, though critics argue the evidence on dye harm is inconclusive and natural dyes may pose their own challenges, like inconsistent colors or untested compounds.

### Non-Food Uses:

Petroleum dyes remain in use for coloring gasoline, lubricants, and other industrial products, with a global market expected to grow at a 5% CAGR through 2031, driven by demand in aviation and marine sectors. However, there's a shift toward biodegradable and bio-based dye formulations due to environmental concerns.