CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

Gavin Newsom, Governor
Yana Garcia, Secretary for Environmental Protection
David Edwards, Ph.D., Acting Director

MEMORANDUM

TO: Yana Garcia
Secretary for Environmental Protection
California Environmental Protection Agency

FROM: David Edwards, Ph.D.
David Edwards (Jan 3, 2025 08:45 PST)
Acting Director
Office of Environmental Health Hazard Assessment

DATE: January 3, 2025

SUBJECT: ADOPTION OF CANCER INHALATION UNIT RISK FACTOR (IUR) FOR ISOPRENE

The Office of Environmental Health Hazard Assessment (OEHHA) has adopted a Cancer Inhalation Unit Risk Factor (IUR) for Isoprene for use in the Air Toxics Hot Spots program, effective January 3, 2025.

Isoprene is used to make synthetic isoprene rubber, which is used mainly in the manufacture of vehicle tires and footwear, and to produce butyl rubber for manufactured goods such as hoses and liners in tubeless tires. In addition, the manufacture of styrene-isoprene-styrene polymers is used to make thermoplastic rubber and pressure-sensitive or thermosetting adhesives. CARB requested that OEHHA derive an IUR for isoprene due to its presence in biogas emissions and in the air of residential areas near oil and gas operations.

A draft document describing the scientific basis for the Isoprene IUR was released on February 16, 2024 to solicit public comments. During the ensuing 45-day public comment period, two public workshops were held (Sacramento and Diamond Bar). No public comments were received. The State's Scientific Review Panel on Toxic Air Contaminants (SRP) peer-reviewed the draft document in August 2024. The draft was then revised in response to SRP comments and reviewed by the SRP chair before finalization.

The IUR and cancer slope factor (CSF) values for Isoprene are as follows:

Inhalation Unit Risk Factor (IUR):	5.4×10^{-6} per microgram per cubic meter $(\mu g/m^3)^{-1}$; 1.5×10^{-5} per part per billion $(ppb)^{-1}$
Cancer Slope Factor (CSF):	1.9×10^{-2} per milligram per kilogram of body weight per day $(mg/kg\text{-}d)^{-1}$

The Isoprene IUR values will be provided to the California Air Resources Board for incorporation into the Hotspots Analysis and Reporting Program (HARP) software suite. HARP software is used to generate Air Toxics Hot Spots facility health risk assessments.

The final document that describes the scientific basis for the IUR is attached and will be made available on the OEHHA web site on January 3rd.

Attachments

cc: Scott Lichtig
Deputy Secretary for Environmental Policy
California Environmental Protection Agency

Richard Boyd, Assistant Division Chief
Transportation and Toxics Division
California Air Resources Board

Matthew O'Donnell, Chief
Risk Reduction Branch
California Air Resources Board

Meng Sun, Chief
Air and Site Assessment and Climate Indicators Branch
Office of Environmental Health Hazard Assessment