



San Diego County Air Pollution Control District

Air Toxics "Hot Spots" Program Fact Sheet

What is the Air Toxics "Hot Spots" Program?

The California Air Toxics "Hot Spots" Information and Assessment Act (Hot Spots Act), Assembly Bill 2588, was adopted into State Law in 1987 to address public health risks from toxic air contaminants emitted by stationary sources (including manufacturing operations, power plants, and other industrial, commercial and governmental operations). The Hot Spots Act requires local air pollution control districts to evaluate toxic air contaminant emissions from various stationary sources and determine which sources generate emissions that may present public health concerns. It also requires stationary source operators to notify communities and develop and implement strategies to reduce their potential health risks when those health risks are above specified levels.

The San Diego County Air Pollution Control District (APCD) is responsible for implementing the Air Toxics "Hot Spots" Program (Program) in San Diego County by: (1) evaluating emissions of toxic air contaminants from stationary sources; (2) identifying sources that can create elevated health risks; and, (3) implementing public notification and risk reduction requirements through APCD Rule 1210, which establishes public notification and risk reduction thresholds and procedures¹.

What is a toxic air contaminant?

Toxic air contaminants are chemicals in gases, liquids, or particles form which are emitted into the atmosphere that upon inhalation, digestion or skin contact may cause adverse health effects. Adverse health effects can range from relatively mild temporary conditions, such as minor eye or throat irritation, shortness of breath or headaches, to permanent and serious conditions such as cancer, birth defects, or damage to lungs, nerves, the liver, the heart, or other organs. The nature and severity of health effects vary by the type and quantity of pollutant, the duration of exposure, the distance from the emission source and the sensitivity of the individual. An example of a toxic air contaminant is diesel particulate matter (diesel PM), which is emitted from diesel engines². The toxic air contaminants evaluated under this Program are included in the tables at the end of APCD Rule 1210¹.

What is a health risk assessment?

A health risk assessment estimates the risk of adverse health effects (cancer and noncancer) from exposures to emissions of toxic air contaminants into the air³. The estimated health risks are based on APCD approved emission calculations, state approved computer models, and health risk calculations based on a number of assumptions, some of which are health protective.

¹ [Rule 1210-Toxic Air Contaminant Health Risks-Public Notification and Risk Reduction \(11/04/2021\) \(sdapcd.org\)](https://sdapcd.org/rule-1210-toxic-air-contaminant-health-risks-public-notification-and-risk-reduction-11/04/2021)

² <https://oehha.ca.gov/calenviroscreen/indicator/diesel-particulate-matter>

³ [Guide to Health Risk Assessment \(ca.gov\)](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/AssessingHealthRisks.aspx)

In accordance with state law (California Health and Safety Code, Section 44362), health risk assessments are to be conducted by operators of stationary sources, within 180 days from a APCD request, and approved by the APCD, in consultation with the California state Office of Environmental Health Hazard Assessment (OEHHA) within one year from the submittal of the Health Risk Assessment. OEHHA is the scientific branch of the California Environmental Protection Agency (CalEPA) which evaluates the effects of toxic compounds and develops health protective exposure levels and health risk assessment guidelines⁴.

How accurate is the health risk assessment?

The OEHHA guidelines states⁵ *“OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public. Sources of uncertainty, which may overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates.”*. Additional information is available at <https://oehha.ca.gov/media/downloads/risk-assessment/document/hrsguide2001.pdf>

How are risk assessment results reported?

Risk assessment results are reported as "excess lifetime cancer risk" and/or as "non-cancer hazard index."

- **Excess lifetime cancer risk** is the maximum estimated increased risk of contracting cancer (above normal background levels) caused by chronic exposure to a chemical suspected of being a human or animal carcinogen. Excess lifetime cancer risk is expressed as the probability of a resident or worker contracting cancer. This estimate assumes that a person resides at the location of maximum residential impact 24 hours per day, 365 days per year with 30 years of exposure, or a person works at the location of maximum occupational impact 8 hours per day, 250 days per year, with 25 years of exposure.

To help put these risks into perspective, in accordance with the California Environmental Protection Agency, *“cancer risks presented in risk assessments are often compared to the overall risk of cancer in the general U.S. population (about 250,000 cases for every one million people) or to the risk posed by all harmful chemicals in a particular medium, such as the air. The cancer risk from breathing current levels of pollutants in California’s ambient air over a 70-year lifetime is estimated to be 760 in one million”*⁶

- **Non-cancer health hazard index** is calculated by dividing the estimated level of exposure to chemicals emitted from a facility to the level of exposure that is not expected to cause any adverse health effects. If the hazard index is less than or equal to one, then the estimated level of exposure is not likely to result in adverse health effects for anyone, including sensitive individuals such as children and the elderly. A hazard index above one indicates that there may be greater potential

⁴ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>

⁵ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>, page 1-5

⁶ [Guide to Health Risk Assessment \(ca.gov\)](#), page 10

for adverse health impacts from exposure to the toxic air contaminants of concern⁷. Under the Hot Spots program, a hazard index is calculated for both acute (short-term) and chronic (long-term) exposures to air toxic contaminants in facility emissions.

- **Cancer burden** estimates the number of potential excess cancer cases within the population that would be exposed to the emissions for a lifetime (70 years). The cancer burden is calculated on the basis of lifetime (70-year) risks (whereas individual cancer risk is based on 30-year residential exposure).⁸

What is being done to reduce toxic air contaminant emissions?

On November 4, 2021, the APCD Governing Board approved amendments to Rule 1210 which reduced the cancer risk threshold for risk reductions from 100 in one million to 10 in one million for emissions that occurred in 2018 and later years, consistent with the cancer risk threshold for public notifications.

For more information regarding the Hot Spots Program please visit the APCD website at <https://bit.ly/31XQXd6>⁹

⁷ [February 2015, Air Toxics Hot Spots Program Risk Assessment \(ca.gov\)](#)

⁸ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>

⁹ https://www.sdapcd.org/content/sdc/apcd/en/engineering/Permits/Engineering_Emissions_Inventory/engineering_phase2hotspots.html