Toxicity Values & the Air Toxics Alignment Rulemaking

Air toxics programs at the Oregon Department of Environmental Quality (DEQ) use toxicity values to determine health risks from breathing in chemicals. There are currently two separate lists of toxicity values; one called toxicity reference values (TRVs) and one called ambient benchmark concentrations (ABCs).

How is health risk determined?

Risk is a combination of how harmful a chemical is (toxicity information) and how long and in what ways a person is in contact with a chemical (exposure information).

Toxicity values provide the toxicity information needed to evaluate risk. Several exposure factors (such as number of years exposed) are then applied as appropriate, to assess risk.

In the Air Toxics Alignment Rulemaking, two of DEQ's objectives are to

NEW

- ***Create a single list of toxicity values***
- ***Include input from an independent science committee during the toxicity value update process***

Addressing these objectives will help ensure that DEQ's toxicity values reflect the latest, best available science. Learn more about DEQ's toxicity values and science committee proposal below.

TRV Toxicity Reference Values

A TRV is the amount of the chemical in air that may cause health problems when inhaled. TRVs are currently used in DEQ's Cleaner Air Oregon and other programs across the country.

How are TRVs developed?

Scientists examine the best available scientific research on a chemical in order to develop a TRV. Setting and updating TRVs is a rigorous and resource intensive process.

Oregon TRVs were established in 2018 and are based on federal and state authoritative sources, like the U.S. Environmental Protection Agency (EPA). DEQ uses values from these agencies because they conduct comprehensive reviews of all available data.

Every three years, DEQ reviews all the authoritative sources to see if updates to TRVs are needed based on the current science of each chemical.

A TRV depends on the type of health effect (cancer or noncancer) and whether exposure is for a long or short period of time (chronic or acute).

A chemical can have up to three different TRVs.

- Noncancer acute
- Noncancer chronic
- Cancer

As of 2020, 259 chemicals have TRVs.

Ambient Benchmark Concentrations ABC

ABCs have the same definition as TRVs. DEQ uses ABCs to identify, evaluate, and address toxic air contaminant problems in Oregon airsheds. ABCs were developed to be air quality goals.

ABCs only account for risk from long-term exposures (chronic).

There is only one kind of health risk (cancer or noncancer) for a chemical, not both, like TRVs.

55 chemicals have ABCs.

How were ABCs developed?

ABCs were based on recommendations from the Oregon Air Toxics Science Advisory Committee (ATSAC), a panel of experts on toxic air contaminants.

ABCs were established before Cleaner Air Oregon. The first set of ABCs were adopted into rule in 2006.

Now that Cleaner Air Oregon is established, DEQ wants to clarify ATSAC's role.

ATSAC Independent Science Committee

In this rulemaking, DEQ is proposing to rescope the ATSAC to provide input on future updates to air contaminant toxicity values. Here are some high-level details about the proposal:

What: Oregon Air Toxics Science Advisory Committee, ATSAC

Why: Provide technical input on toxicity values that will inform DEQ, Oregon Health Authority, rules advisory committees, and the Environmental Quality Commission

Who: Scientific experts on toxicity values, including toxicologists, epidemiologists, and chemists

When: During the toxicity value update process that occurs every three years

For more information:

Check out our website. Rulemaking updates will be posted on ORDEQ.org/AirToxics2021

Revision Date: June 29, 2021

Oregon Health Authority

DEQ State of Oregon Department of Environmental Quality

To comment on the proposed rules, please participate in the public comment period from July 1 to August 20, 2021. Our website provides instructions on how to submit comments.