

## **Air Toxics Science Advisory Committee**

**July 18, 2016**

# Air Toxics Science Advisory Committee

- First convened in 2004
- Related rulemaking in 2006
- Post-2006 ATSAC meetings
  - Administrative tasks
  - Review of some chemical toxicity data to provide current information to Portland Air Toxics Solutions (PATs) project
  - 2011 – consideration of short-term guideline concentrations
- Latest Ambient Benchmark Concentration (ABC) table published 2010
- ATSAC reconvened in 2015 to review benchmarks, required by rule every 5 years

# Air Toxics Science Advisory Committee

- Committee of seven volunteer outside experts – science-based work only
- Disciplines represented:
  - Toxicology
  - Environmental science/environmental engineering
  - Risk assessment
  - Epidemiology/biostatistics
  - Medicine (physician) with experience in Public Health
  - Air pollution modeling, monitoring, meteorology, or engineering
- **Charged with using only toxicity data available from recognized agencies (e.g., IRIS, OEHHA, ASTDR) to make their recommendations**
- Recommends ABC revisions or retentions to DEQ
- Consensus required by a quorum of committee members

# ATSAC Prioritization of Chemicals 2004-2006

In 2004-2006, highest-priority air toxics were defined as those that posed the greatest risk to public health. Prioritization included consideration of:

- Toxicity/potency of pollutants
- Exposure and number of people at risk
- Impact to sensitive populations
- Number and degree of predicted ABC exceedances
- Potential to cause harm through persistence and bioaccumulation
- Toxicity information had to be available for the chemical being considered
- Chemical must be emitted at a minimum of 1 pound per year in Oregon
- Chemicals emitted at highest levels in Oregon were given first consideration, as were the most-potent carcinogens and most-toxic noncarcinogens

# ATSAC Review of Standing ABCs – circa 2015

- ❑ Toxicity data is constantly changing, hence need for intermittent review of ABCs
- ❑ 52 standing benchmarks were considered for comprehensive toxicity information review
- ❑ DEQ lead performed initial survey of 52 ABCs to identify any new toxicity information that had become available since 2010; then ATSAC reviewed the DEQ survey.

## **27 of 52 needed review by the ATSAC:**

10 of 26 – ABCs were retained

8 of 26 -- ABCs revised to be less stringent

7 of 26 – ABCs revised to be more stringent

Nickel groups –some revisions less stringent, some more stringent

Assessment of diesel particulate matter still in progress; when finished, 27 of the 52 ABCs will have been reviewed.

# ATSAC Review – circa 2015

- From Dec. 2014 through January 2016, eleven ATSAC meetings were held; one more meeting is needed
- ATSAC made recommendations for 27 standing ABCs plus four new ABCs during this period
  - New chemicals assessed and assigned ABCs: *fluorides (as a group)*; *phosgene*; *n-propyl bromide*; and *styrene*
- Majority of three of these meetings were devoted to discussions of diesel particulate matter toxicity information; ATSAC has not yet made a recommendation for DPM
- For first time, a member of the ATSAC is preparing calculations for diesel particulate matter toxicity based on primary literature; this process is still pending

# Hierarchy of Toxicity Information Sources – *for use by Reconvened ATSAC, 2014-2016*

- U.S. EPA, Integrated Risk Information System (IRIS);
- U.S. EPA, Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV);
- World Health Organization(WHO)/International Agency for Research on Cancer (IARC);
- California EPA, Office of Environmental Health Hazard Assessment (OEHHA) / Air Resources Board (ARB) adopted values;
- California EPA OEHHA / ARB proposed values;
- CDC, Agency for Toxic Substances and Disease Registry (ATSDR);
- U.S. EPA, Office of Air Quality Planning and Standards (OAQPS).

# Hierarchy of Toxicity Information Sources – *for use by Reconvened ATSAC, 2014-2016*

- In practical terms, those sources that provide numerical toxicity values were the most useful (e.g., IRIS, OEHHA, ATSDR, OAQPS).
- The sequence of the hierarchy was not used rigidly by the ATSAC.
- Using the sources identified in the hierarchy, the ATSAC compared multiple toxicity values for a chemical by considering:
  - Basis of primary toxicity studies (e.g., epidemiological vs. animal studies)
  - Robustness of toxicity information and any related data
  - Date/age of toxicity values
  - If two different toxicity values were extrapolated from the same study using added uncertainty factors, then ATSAC policy required choice of higher (less stringent) toxicity value
  - Best professional judgment