

RELS - Basis and Continuing Development Process

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Changes to the REL Process

- OEHHA has made some changes to the REL development process.
- The Air Toxics Hot Spots Program Technical Support Document for the Derivation of Noncancer Reference Exposure Levels was approved and adopted in 12/08.
- This document is available on line at www.oehha.ca.gov.

Changes

- Greater reliance on PBPK models to address interspecies differences.
- Greater reliance on Benchmark dose methods for determining the point of departure instead of NOAEL.
- We have raised our default intraspecies uncertainty factor from 10 to 30, in part to address the greater susceptibility of children relative to adults to some chemicals.

Changes

- We have developed a new class of RELs called the 8-hour REL.
- These RELs are protective against repeated 8-hour exposures for a significant fraction of a lifetime.
- They were meant for the Hot Spots program to address exposure from stationary facilities to offsite workers.

Changes

- Offsite workers are treated as members of the public for exposures that originate from other facilities (not under OSHA).
- Workers are typically at the worksite for 8-hours per day so the 24 hour chronic RELs were overprotective in some instances.
- We will have 8-hour RELs that are protective of children and adults and for some chemicals a separate number for adults.
- The 30 fold safety factor is not applied to sensory irritants—no evidence of greater susceptibility of children.

Changes

- The new 8-hour RELs, as well as the chronic RELs may be useful for indoor air applications but at this point we only have a few of these numbers available.
- New RELs are available under the new guidelines for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury.
- We are working on RELS for caprolactam, toluene, 1,2-butadiene, nickel and toluene diisocyanates.

Changes

- The new formaldehyde chronic REL is $9 \mu\text{g}/\text{m}^3$ and the 8-hour REL is the same.
- The new acetaldehyde chronic REL is $140 \mu\text{g}/\text{m}^3$ and the 8-hour REL is $300 \mu\text{g}/\text{m}^3$.

RELS

- A REL is an air concentration at or below which health effects would not be expected even for sensitive members of the general population such as children, pregnant women, the sick and elderly.
- If the REL is exceeded the probability of health effects increases.
- It is not a threshold for toxic effects.

RELs

- RELs are risk assessment numbers solely based of public health considerations.
- Risk management considerations may need to be taken into account for Section 01350.
- OEHHA is happy to consult with the risk managers, but our purview is risk assessment.

Summary

- New Guidelines will emphasize more modern scientific approaches, and incorporate new scientific toxicology studies.
- The RELs values may go up or down after our reevaluation.
- New Chronic, Acute and 8-Hour REL procedures should help ensure protection of children's health under our SB-25 mandate.