

## MEMORANDUM

**TO:** Winston H. Hickox  
Agency Secretary

**FROM:** Joan E. Denton, Ph.D.  
Director

**DATE:**

**SUBJECT:** ADOPTION OF CHRONIC REFERENCE EXPOSURE LEVELS FOR  
AIRBORNE TOXICANTS

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In accordance to Health and Safety Code, Section 44300 *et seq.* (The Air Toxics Hot Spots Information and Assessment Act, AB 2588, Connelly as amended by SB 1731, Calderon), the Office of Environmental Health Hazard Assessment (OEHHA) hereby adopts Chronic Reference Exposure Levels (RELs) for 22 chemicals (attachment).

OEHHA is mandated to develop risk assessment guidelines to be used by state and local agencies in implementing the Air Toxics Hot Spots program. Development of these guidelines is proceeding in stages. There are four technical support documents, which have been adopted after public comment, and review by the Scientific Review Panel (SRP) on Toxic Air Contaminants. These describe the scientific basis for (respectively) acute RELs, cancer potency factors, chronic RELs, and exposure assessments. A fifth document, a guidance manual based on the four technical support documents, is in preparation.

The third technical support document, *Air Toxics Hot Spots Program Risk Assessment Guidelines. Part III. The Determination of Chronic Reference Exposure Levels for Airborne Toxicants*, was adopted on February 23, 2000. A chronic REL is an airborne level that would pose no significant health risk to individuals indefinitely exposed to that level. RELs are based solely on health considerations, and are developed from the best available data in the scientific literature. This technical support document provided the methodology and specific chronic RELs for 22 chemicals; 16 additional RELs were adopted on April 25, 2000. The RELs are accompanied by a summary for each describing its chemical and physical properties, its chronic health effects, and the data used to calculate the REL.

At its December 6th, 2000 meeting, the SRP endorsed an additional group of 22 chronic RELs, bringing the total number of chemicals for which chronic RELs are provided to 60. The

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expanded list and supporting summaries will be available on our Web site. A further 60 RELs are currently undergoing review by the public and the SRP, and revision by OEHHA; these will be presented in due course.

Should you have any questions, please contact me at (916) 322-6325.

Attachment

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**Attachment**

**Chronic Reference Exposure Levels Adopted by OEHHA – December 2000**

|    | <i>Substance (CAS #)</i>  | <i>Chronic REL (<math>\mu\text{g}/\text{m}^3</math>)</i> | <i>Hazard Index Target(s)</i>                                 |
|----|---|--|---|
| 1  | Acrolein (107-02-8)   | 0.06   | Respiratory system; eyes                                      |
| 2  | Arsenic (7440-38-2) & arsenic compounds                         | 0.03   | Development; cardiovascular system; nervous system            |
| 3  | Butadiene (106-99-0)  | 20   | Reproductive system   |
| 4  | Cadmium (7440-43-9) & cadmium compounds                         | 0.02   | Kidney; respiratory system                                    |
| 5  | Carbon tetrachloride (56-23-5)                                  | 40   | Alimentary system; development; nervous system                |
| 6  | Chlorine dioxide (10049-04-4)                                   | 0.6  | Respiratory system  |
| 7  | Chlorobenzene (108-90-7)  | 1000   | Alimentary system; kidney; reproductive system                |
| 8  | Chromium, hexavalent: soluble compounds except chromic trioxide | 0.2  | Respiratory system  |
| 9  | Chromic trioxide (as chromic acid mist)                         | 0.002  | Respiratory system  |
| 10 | Cresol mixtures (1319-77-3)                                     | 600  | Nervous system  |
| 11 | Dichlorobenzene (1,4-) (106-46-7)                               | 800  | Nervous system; respiratory system; alimentary system; kidney |
| 12 | Dichloroethylene (1,1-) (73-35-4)                               | 70   | Alimentary system   |
| 13 | Dimethylformamide (N,N-) (68-12-2)                              | 80   | Alimentary system; respiratory system                         |
| 14 | Epichlorohydrin (106-89-8)                                      | 3  | Respiratory system; eyes                                      |
| 15 | Epoxybutane (1,2-) (106-88-7)                                   | 20   | Respiratory system; cardiovascular system                     |
| 16 | Ethylene dichloride (107-06-2)                                  | 400  | Alimentary system (liver)                                     |
| 17 | Ethylene oxide (75-21-8)  | 30   | Nervous system  |
| 18 | Glutaraldehyde (111-30-8)                                       | 0.08   | Respiratory system  |
| 19 | Hydrazine (302-01-2)  | 0.2  | Alimentary system; endocrine system                           |
| 20 | Methylene Diphenyl Isocyanate (101-68-8)                        | 0.7  | Respiratory system  |
| 21 | Phthalic anhydride (85-44-9)                                    | 20   | Respiratory system  |
| 22 | Toluene diisocyanates (2,4- & 2,6-)                             | 0.07   | Respiratory system  |

OEHHA