

**Appendix B. Acute, 8-Hour, and Chronic Reference Exposure  
Levels (RELs) Summary Table**

## **B.1 Introduction to Reference Exposure Levels Summary Table**

The acute noncancer Reference Exposure Levels (RELs) originally appeared in the “*Air Toxics Hot Spots Program Risk Assessment Guidelines Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants*” March 1999 (OEHHA 1999a). In a subsequent publication, “*Air Toxics Hot Spots Program Risk Assessment Guidelines Part III: Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels*” (OEHHA 2000), chronic noncancer RELs were presented. Existing acute and chronic RELs have undergone public review and peer review by the State’s Scientific Review Panel (SRP) on Toxic Air Contaminants (TACs). The 8-hour RELs are presented for the first time in this document. Seven chemicals are being re-evaluated using updated methods put forth in this guidelines document including benchmark dose (BMC) analysis and PBPK modeling. The acute, 8-hour, and chronic REL summaries for these seven chemicals are in Appendix D of this document.

OEHHA developed chronic inhalation RELs for chemicals on the list of substances for which emissions need to be quantified (see Appendix C) under the Air Toxics Hot Spots Program. These substances were selected primarily based on:

- (1) the magnitude of current known emissions in California and
- (2) the availability of a scientific database on which to estimate a chronic REL. The California Air Resources Board (ARB) previously adopted chronic RELs for acetaldehyde, diesel exhaust particulates, and perchloroethylene during the identification of these substances as TACs.

This public review draft lists only new RELs developed using the methodology presented in the revised technical support document. The final version will also list RELs developed using the original (OEHHA1999a and 2000) methodologies, until such time as those values are replaced by newly developed values. Prioritization for updating these original values will follow the scheme presented in the *Prioritization of Toxic Air contaminants under the Children’s environmental Health Protection Act* (OEHHA, 2001).

**TABLE B.1.1. OEHHA ACUTE (A), 8-HOUR (8) AND CHRONIC (C) REFERENCE EXPOSURE LEVEL (REL) SUMMARY<sup>1</sup>**

Substance		Inhalation REL ( $\mu\text{g}/\text{m}^3$ )	Hazard Index Target Organs	Human Data	Oral REL ( $\mu\text{g}/\text{kg}$ BW)
<b>Acetaldehyde</b> (75-07-0)	<b>A</b>	750	Sensory irritation; eyes	X	
	<b>8</b>	270	Respiratory system	X	
	<b>C</b>	140	Respiratory system		
<b>Acrolein</b> (107-02-8)	<b>A</b>	2.3	Sensory irritation; eyes	X	
	<b>8</b>	1.6	Respiratory system		
	<b>C</b>	0.1	Respiratory system		
<b>Inorganic Arsenic</b> (7440-38-2) & arsenic compounds (including arsine)	<b>A</b>	0.20	Developmental; nervous, & cardiovascular systems		
	<b>8</b>	0.015	Development; nervous system	X	
	<b>C</b>	0.015	Development; nervous system	X	3.5
<b>Formaldehyde</b> (50-00-0)	<b>A</b>	55	Sensory irritation; eyes	X	
	<b>8</b>	9	Respiratory system	X	
	<b>C</b>	9	Respiratory system	X	
<b>Manganese &amp; compounds</b>	<b>A</b>	--			
	<b>8</b>	0.05	Nervous system	X	
	<b>C</b>	0.03	Nervous system	X	
<b>Mercury (inorganic)</b> (7439-97-6)	<b>A</b>	0.6	Nervous system, development		
	<b>8</b>	0.06	Nervous system	X	
	<b>C</b>	0.03	Nervous system	X	0.16

<sup>1</sup> New acute, 8-hour, and chronic RELs, whose summaries appear in this document (See Appendix D).