TABLE C-2-4

HAZARD INDEX FOR INHALATION: NONCARCINOGENS

Description

For non-cancer health effects, *HQ*s for inhalation exposures are added across COPCs when they target the same organ to obtain an *HI* for the target organ. See Appendix A-2 for target organs and Appendix A-3 for COPC-specific inhalation *RfC*s and for identification of COPCs that cause noncarcinogenic effects via the inhalation route of exposure and their associated target organs. Uncertainties associated with this equation include the following:

(1) The summation of noncarcinogenic hazards across multiple COPCs means that the uncertainties associated with estimating hazards for each COPC (see *HQ* below) are also summed. This means that the total noncarcinogenic hazard, as defined below, is unlikely to be overestimated.
(2) As defined below, the *HI* sums the *HQ*s for all COPCs to which a receptor is potentially exposed. Ideally, *HQs* should be summed only for COPCs that affect the same target organs and systems. To the extent that COPCs affect different target organs, summing their associated *HQs* will overestimate the actual *HI*.

Equation

$$HI_{inh} = \sum_{i} HQ_i$$

Variable	Description	Units	Value
$HI_{inh(j)}$	Hazard index for target organ effect *j* through direct inhalation of all COPCs	unitless	
$HQ_{inh(i)}$	Hazard quotient for direct inhalation of COPC *i*	unitless	**Varies** This variable is COPC- and site-specific, and is calculated by using the equation in Table C-2-3. Uncertainties associated with this variable include the following: (1) COPC-specific *RfCs* are unlikely to underestimate a COPC's potential for causing adverse health effects. 2) Most of the uncertainties associated with the variables used to calculate C_a, specifically *Q*, *Cyv*, and *Cyp*, are site-specific.