TABLE C-1-11

SEGREGATED HAZARD INDEX FOR SPECIFIC ORGAN EFFECTS: NONCARCINOGENS

Description

For non-cancer health effects, hazard quotients are added across COPCs when they target the same organ to calculate a segregated *hazard index*. See Appendix A-2 for identification of noncarcinogens and their associated target organ. Since segregation by critical effect requires the identification of all major effects, information in Appendix A-2 may not always represent the most current and complete information on COPC-specific major effects. Therefore, Appendix A-2 may require supplemental information about COPC-specific major effects. Uncertainties associated with this equation include the following:

(1) Target organ segregation is dependent upon the critical effect. Segregation by critical effect requires the identification of all major effects, not just those seen at higher doses. The segregation process may over- or underestimate the *hazard index*.

Equation

$$HI_j = \sum_i HQ_i$$

Variable	Description	Units	Value
HI_j	Hazard index for exposure pathway *j*	unitless	
HQ_i	Hazard quotient for COPC *i*	unitless	**Varies** This variable is COPC- and site-specific, and is calculated by using the equation in Table C-1-8. The value for this variable will vary for each exposure pathway. The following uncertainty is associated with this variable: (1) Default factors for exposure frequency and exposure duration are assured to represent the highest exposure that is reasonably expected to occur as a site. In practice, intakes are estimated by combining upper-bound (90th to 95th percentile) values for these exposure variables, but not for other parameters. This equation is likely to overestimate intakes and HI_j. (2) Adverse health effects at low exposure levels are difficult to either directly either by animal experiments or by epidemiological studies. The development of *RfD*s generally entails applying uncertainty factors to extempolate from the results of studies using high exposure doses to lower exposure doses expected for human contact in the environment. This approach is unlikely to underestimate and likely overestimate HI_j. The uncertainties associated with this variable are COPC- and site-specific and will vary for each exposure pathway.