

used by the Agency to quantify carcinogenic risk. The Q* approach assumes that any amount of exposure will lead to some degree of cancer risk. A Q* is calculated and used to estimate risk which represents a probability of occurrence of additional cancer cases (e.g., risk is expressed as 1×10^{-6} or one in a million). Under certain specific

circumstances, MOE calculations will be used for the carcinogenic risk assessment. In this non-linear approach, a "point of departure" is identified below which carcinogenic effects are not expected. The point of departure is typically a NOAEL based on an endpoint related to cancer effects though it may be a different value

derived from the dose response curve. To estimate risk, a ratio of the point of departure to exposure ($MOE_{cancer} = \text{point of departure/exposures}$) is calculated. A summary of the toxicological endpoints for Indoxacarb used for human risk assessment is shown in Table 2 of this unit:

TABLE 2.— SUMMARY OF TOXICOLOGICAL DOSE AND ENDPOINTS FOR INDOXACARB FOR USE IN HUMAN RISK ASSESSMENT

Exposure Scenario	Dose Used in Risk Assessment, UF	FQPA SF* and Level of Concern for Risk Assessment	Study and Toxicological Effects
Acute Dietary (females 13–50 years of age)	NOAEL = 2.0 mg/kg/day UF = 100 Acute RfD = 0.02 mg/kg	FQPA SF = 1 aPAD = acute RfD÷FQPA SF = 0.02 mg/kg/day	Developmental rat toxicity study. developmental LOAEL = 4.0 mg/kg/day based on decreased fetal body weight.
Acute Dietary general population including infants and children	NOAEL = 12.5 mg/kg UF = 100 Acute RfD = 0.12 mg/kg	FQPA SF = 1 aPAD = acute RfD÷FQPA SF = 0.12 mg/kg/day	Acute oral rat neurotoxicity study. LOAEL = 50 mg/kg based on decreased body weight and body weight gain in females.
Chronic Dietary all populations	NOAEL = 2.0 mg/kg/day UF = 100 Chronic RfD = 0.02 mg/kg/day	FQPA SF = 1 cPAD = chronic RfD÷FQPA SF = 0.02 mg/kg/day	90-day rat subchronic toxicity study, 90-day rat neurotoxicity study, chronic/carcinogenicity rat study. LOAEL = 3.3 mg/kg/day based on decreased body weight, alopecia, body weight gain, food consumption and food efficiency; decreased hematocrit, hemoglobin and red blood cells only at 6 months. 3.3 mg/kg/day is the lowest LOAEL of the three studies.
Short-Term Oral (1–7 days) (Residential)	oral study NOAEL= 2.0 mg/kg/day	LOC for MOE = 100 (Residential, includes the FQPA SF)	Developmental rat toxicity study. Maternal LOAEL = 4.0 mg/kg/day based on decreased mean maternal body weights, body weight gains, and food consumption.
Intermediate-Term Oral (1 week - several months) (Residential)	oral study NOAEL= 2.0 mg/kg/day	LOC for MOE = 100 (Residential, includes the FQPA SF)	90-day rat subchronic toxicity study. LOAEL = 3.8 mg/kg/day based on decreased body weight, body weight gain, food consumption and food efficiency.
Short- (1–7 days), Intermediate- (1 week - several months), and Long-(several months - lifetime) Term Dermal (Occupational/Residential)	dermal study NOAEL= 50 mg/kg/day	LOC for MOE = 100 (Occupational) LOC for MOE = 100 (Residential, includes the FQPA SF)	28-day rat dermal toxicity study. LOAEL = 500 mg/kg/day based on decreased body weights, body weight gains, food consumption, and food efficiency in females, and changes in hematology parameters (increased reticulocytes), the spleen (increased absolute and relative weight males only, gross discoloration), and clinical signs of toxicity in both sexes.
Short-Term Inhalation (1–7 days) (Occupational/Residential)	oral study NOAEL= 2.0 mg/kg/day (inhalation absorption rate = 100%)	LOC for MOE = 100 (Occupational) LOC for MOE = 100 (Residential, includes the FQPA SF)	Rat developmental toxicity study. Maternal LOAEL = 4.0 mg/kg/day based on decreased mean maternal body weights, body weight gains, and food consumption.
Intermediate-Term Inhalation (1 week - several months) (Occupational/Residential)	oral study NOAEL= 2.0 mg/kg/day (inhalation absorption rate = 100%)	LOC for MOE = 100 (Occupational) LOC for MOE = 100 (Residential, includes the FQPA SF)	90-day rat subchronic toxicity study. LOAEL = 3.8 mg/kg/day based on decreased body weight, body weight gain, food consumption and food efficiency.
Long-Term Inhalation (several months - lifetime) (Occupational/Residential)	oral study NOAEL= 2.0 mg/kg/day (inhalation absorption rate = 100%)	LOC for MOE = 100 (Occupational) LOC for MOE = 100 (Residential, includes the FQPA SF)	90-day rat subchronic toxicity study, 90-day rat neurotoxicity study, chronic/carcinogenicity rat study. LOAEL = 3.3 mg/kg/day based on decreased body weight, body weight gain, food consumption and food efficiency; decreased hematocrit, hemoglobin and red blood cells only at 6 months.