

2. Exposure of tetrathal employees

- a. Mean total chlorodibenzodioxin content of product (Samples #1-11) is 68 ppb (68 pg mg⁻¹ of tetrathal).
- b. Mean content of tetra- through heptachlorodibenzodioxin in product is 47 ppb (47 pg/mg tetrathal).
- c. Because tetrathal is irritating, assume that dermal exposure can be neglected; thus inhalation affords the only significant route of exposure. Respiratory protection is worn; assume 90% protection and an inhalation volume of 10 m³/shift, a mean dust level of <2.9 mg tetrathal/m³ air (see J. Wolfsburger memo attached) and complete absorption of all inhaled dust. Thus tetrathal intake is $0.1 \times 2.9 \times 10 = <2.9$ mg/d.
- d. Intake of all chlorodibenzodioxins is:
 $<2.9 \text{ mg tetrathal/d} \times 68 \text{ pg CDD/mg tetrathal} = <197 \text{ pg/d.}$
- e. Intake of tetra- through heptachlorodibenzodioxins is:
 $<2.9 \text{ mg/d} \times 47 \text{ pg/mg} = <136 \text{ pg/d.}$
- f. Assuming 70 kg body mass, intake becomes:
 1. For all chlorodibenzodioxins, $<197/70 = <2.8 \text{ pg/kg/d.}$
 2. For Cl₄-Cl₇ dibenzodioxins, $<136/70 = <1.9 \text{ pg/kg/d.}$