

infants <1 year old and 12% of the cPAD for children 1–2 years old. There are no residential uses for thiamethoxam that result in chronic residential exposure to thiamethoxam. In addition, despite the potential for

chronic dietary exposure to thiamethoxam in drinking water, after calculating DWLOCs and comparing them to conservative model estimated environmental concentrations of thiamethoxam in surface water and

ground water, EPA does not expect the aggregate exposure to exceed 100% of the cPAD, as shown in the following Table 3:

TABLE 3.—AGGREGATE RISK ASSESSMENT FOR CHRONIC (NON-CANCER) EXPOSURE TO THIAMETHOXAM

Population subgroup	cPAD mg/kg/day	% cPAD (Food)	Surface water EEC (ppb)	Ground water EEC (ppb)	Chronic DWLOC (ppb)
General U.S. population	0.0006	4	0.43	1.94	20
All infants (<1 year old)	0.0006	8	0.43	1.94	5.6
Children (1–2 years old)	0.0006	12	0.43	1.94	5.3
Children (3–5 years old)	0.0006	10	0.43	1.94	5.4
Children (6–12 years old)	0.0006	6	0.43	1.94	5.6
Youth (13–19 years old)	0.0006	4	0.43	1.94	20
Adults (20–49 years old)	0.0006	3	0.43	1.94	20
Adults (50+ years old)	0.0006	3	0.43	1.94	20
Females (13–49 years old)	0.0006	3	0.43	1.94	17

3. *Short-term risk.* Short-term aggregate exposure takes into account residential exposure plus chronic exposure to food and water (considered to be a background exposure level). Thiamethoxam is not registered for use on any sites that would result in residential exposure. Therefore, the aggregate risk is the sum of the risk from food and water, which were previously addressed.

4. *Intermediate-term risk.* Intermediate-term aggregate exposure takes into account non-dietary, non-occupational exposure plus chronic exposure to food and water (considered to be a background exposure level). Thiamethoxam is not registered for use

on any sites that would result in residential exposure. Therefore, the aggregate risk is the sum of the risk from food and water, which were previously addressed.

5. *Aggregate cancer risk for U.S. population.* At the present time, there are no uses of thiamethoxam that will result in non-dietary, non-occupational (i.e., residential) exposures. Therefore, aggregate cancer risk estimates for thiamethoxam address only the food and drinking water pathways of exposure. EECs for thiamethoxam for comparison to the DWLOCs are 1.94 µg/L for cancer scenarios. The Agency does not have aggregate risk concerns when

the estimated residues in water are less than the DWLOCs.

For cancer risk, which is estimated for the total U.S. population only, the DWLOC is 2.15 µg/L and assumes a negligible risk level of 3×10^{-6} rather than 1×10^{-6} . For risk management purposes, EPA considers a cancer risk to be greater than negligible when it exceeds the range of 1 in 1 million, however the Agency has generally treated cancer risks up to 3 in 1 million as within the range of 1 in 1 million. The DWLOC value indicates that aggregate exposure to thiamethoxam is not likely to exceed the Agency's level of concern as shown in the following Table 4:

TABLE 4.—AGGREGATE RISK ASSESSMENT FOR CHRONIC (CANCER) EXPOSURE TO THIAMETHOXAM

Population subgroup	Maximum acceptable exposure (mg/kg/day) ¹	Food exposure (mg/kg/day)	Maximum water exposure (mg/kg/day) ²	Surface water EEC (ppb)	Ground water EEC (ppb)	Cancer DWLOC (ppb) ³
General U.S. population	0.0000795	0.000018	0.000062	0.13	1.94	2.15

¹ Maximum acceptable exposure = $3 \times 10^{-6} \div 0.0377 \text{ (mg/kg/day)}^{-1} = 7.95 \times 10^{-5} \text{ mg/kg/day}$.

² Maximum water exposure = maximum acceptable exposure - food exposure.

³ DWLOC = maximum water exposure (mg/kg/day) 1,000 µg/mg H body weight (70 kg general population) ÷ water consumption (2 L/day). Value has been rounded to three significant figures.

EPA recognizes that the active ingredient clothianidin is identical to the thiamethoxam metabolite-of-concern CGA-322704; however, clothianidin has not been classified as a carcinogen and therefore, it has been removed from the cancer assessment.

6. *Determination of safety.* Based on these risk assessments, EPA concludes that there is a reasonable certainty that no harm will result to the general population, and to infants and children from aggregate exposure to thiamethoxam residues.

V. Other Considerations

A. Analytical Enforcement Methodology

Adequate enforcement methodology High Performance Liquid Chromatography using Ultra Violet or Mass Spectrometry (HPLC/UV or MS) is