

TABLE 3.—AGGREGATE RISK ASSESSMENT FOR ACUTE EXPOSURE TO THIAMETHOXAM

Population Subgroup	aPAD (mg/kg)	%aPAD (Food)	Surface Water EEC (ppb)	Ground Water EEC (ppb)	Acute DWLOC (ppb)
General U.S. population	0.1	3	7.1	1.94	2,400
All infants (<1 year old)	0.1	9	7.1	1.94	910
Children (1 - 2 years old)	0.1	10	7.1	1.94	900
Females (13 - 49 years old)	0.1	2	7.1	1.94	2,900

2. *Chronic risk.* Using the exposure assumptions described in this unit for chronic exposure, EPA has concluded that exposure to thiamethoxam from food will utilize 6% of the cPAD for the U.S. population, 14% of the cPAD for all infants (less than 1 year old), and

17% of the cPAD for children 1 to 2 years old. There are no residential uses for thiamethoxam that result in chronic residential exposure to thiamethoxam. In addition, there is potential for chronic dietary exposure to thiamethoxam in drinking water. After

calculating DWLOCs and comparing them to the EECs for surface water and ground water, EPA does not expect the aggregate exposure to exceed 100% of the cPAD, as shown in the following Table 4:

TABLE 4.—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)
U.S. population	0.0006	6	0.43	1.94	20
All infants (<1 year old)	0.0006	14	0.43	1.94	5.1
Children (1 - 2 years old)	0.0006	17	0.43	1.94	5.0

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 do not exceed the Agency's level of concern.

4. *Intermediate-term risk.* Intermediate-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 do not exceed the Agency's level of concern.

5. *Aggregate cancer risk for U.S. population.* The dietary cancer risk from residues in food is  $9.04 \times 10^{-7}$ . A cancer DWLOC is calculated only for the general U.S. population. For risk management purposes, EPA considers a cancer risk to be greater than negligible when it exceeds the range of 1 in 1 million. EPA has generally treated cancer risks up to 3 in 1 million as within the range of 1 in 1 million. The

DWLOC for cancer aggregate risk (no residential uses) is calculated using the following equations:

$$\text{DWLOC cancer } (\mu\text{g/L}) = \frac{\text{chronic water exposure milligrams/kilogram/day (mg/kg/day)} \times (\text{body weight/kg})}{\text{consumption (L)} \times 10^{-3} \text{ mg}/\mu\text{g}}$$

$$\text{Chronic water exposure (mg/kg/day)} = \frac{\text{negligible risk}}{Q^* - (\text{chronic food exposure})(\text{mg/kg/day})}$$

Assuming that the negligible risk value could be as high as  $3 \times 10^{-6}$ , the chronic water exposure value is estimated to be:  $3 \times 10^{-6} / 3.77 \times 10^{-2} - 0.000024 = 0.000056 \text{ mg/kg/day}$

The DWLOC cancer =  $0.000056 \text{ mg/kg/day} \times 70 \text{ kg} / 2 \text{ L} \times 10^{-3} \text{ mg}/\mu\text{g} = 1.95 \mu\text{g/L}$

The surface water EEC is  $0.13 \mu\text{g/L}$  and the ground water EEC is  $1.94 \mu\text{g/L}$ . Since the ground water value is greater than the surface water value, it will be used for comparison purposes and will protect for any concerns for surface water concentrations. Since the cancer DWLOC is not exceeded by the ground water EEC, the cancer risk is below EPA's level of concern.

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.

#### IV. Other Considerations

##### A. Analytical Enforcement Methodology

Adequate enforcement methodology (solvent extraction, liquid-liquid partitioning and solid-phase extraction cleanup, and high performance liquid chromatography using ultra-violet detection (HPLC/UV) analysis) is available to enforce the tolerance expression. The method may be requested from: Chief, Analytical Chemistry Branch, Environmental Science Center, 701 Mapes Rd., Ft. Meade, MD 20755-5350; telephone number: (410) 305-2905; e-mail address: [residuemethods@epa.gov](mailto:residuemethods@epa.gov).

##### B. International Residue Limits

There are no international residue limits for thiamethoxam.

#### V. Conclusion

Therefore, the tolerances are established for combined residues of thiamethoxam, 3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-methyl-N-nitro-4H-1,3,5-oxadiazin-4-imine and its metabolite (N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine), in or on imported coffee at 0.05 ppm, pecan at 0.02 ppm, stone fruit