

point of comparison against the model estimates of a pesticide's concentration in water (EECs). DWLOC values are not regulatory standards for drinking water. DWLOCs are theoretical upper limits on a pesticide's concentration in drinking water in light of total aggregate exposure to a pesticide in food and residential uses. In calculating a DWLOC, the Agency determines how much of the acceptable exposure (i.e., the PAD) is available for exposure through drinking water e.g., allowable chronic water exposure (mg/kg/day) = chronic (cPAD) – (average food + residential exposure). This allowable exposure through drinking water is used to calculate a DWLOC.

A DWLOC will vary depending on the toxic endpoint, drinking water consumption, and body weights. Default body weights and consumption values as used by the U.S. EPA Office of Water are used to calculate DWLOCs: 2 liter

(L)/70 kg (adult male), 2L/60 kg (adult female), and 1L/10 kg (child). Default body weights and drinking water consumption values vary on an individual basis. This variation will be taken into account in more refined screening-level and quantitative drinking water exposure assessments. Different populations will have different DWLOCs. Generally, a DWLOC is calculated for each type of risk assessment used: Acute, short-term, intermediate-term, chronic, and cancer.

When EECs for surface water and ground water are less than the calculated DWLOCs, EPA concludes with reasonable certainty that exposures to the pesticide in drinking water (when considered along with other sources of exposure for which EPA has reliable data) would not result in unacceptable levels of aggregate human health risk at this time. Because EPA considers the aggregate risk resulting from multiple

exposure pathways associated with a pesticide's uses, levels of comparison in drinking water may vary as those uses change. If new uses are added in the future, EPA will reassess the potential impacts of residues of the pesticide in drinking water as a part of the aggregate risk assessment process.

1. *Acute risk.* An acute dietary endpoint has only been identified for females (13 years and older). Using the exposure assumptions discussed in this unit for acute exposure, the acute dietary exposure from food to hexythiazox will occupy less than 1% of the aPAD for females 13 years and older. In addition, there is potential for acute dietary exposure to hexythiazox in drinking water. After calculating DWLOCs and comparing them to the EECs for surface and ground water, EPA does not expect the aggregate exposure to exceed 100% of the aPAD, as shown in the following Table 2:

TABLE 2.—AGGREGATE RISK ASSESSMENT FOR ACUTE EXPOSURE TO HEXYTHIAZOX

| Population Subgroup | aPAD (mg/kg) | % aPAD (Food) | Surface Water EEC (ppb) | Ground Water EEC (ppb) | Acute DWLOC (ppb) |
|----------------------------|--------------|---------------|-------------------------|------------------------|-------------------|
| Females 13 years and older | 2.4 | <1% | 1.81 | 0.009 | 72,000 |

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

children subpopulations. There are no residential uses for hexythiazox. There is potential for chronic dietary exposure to hexythiazox 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 3:

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

| Population Subgroup | cPAD mg/kg/day | % cPAD (Food) | Surface Water EEC (ppb) | Ground Water EEC (ppb) | Chronic DWLOC (ppb) |
|---------------------|----------------|---------------|-------------------------|------------------------|---------------------|
| U.S. population | 0.025 | <1% | 0.91 | 0.009 | 870 |
| Children | 0.025 | <1% | 0.91 | 0.009 | 250 |
| Infants | 0.025 | <1% | 0.91 | 0.009 | 250 |

3. *Short-term and intermediate-term risk.* Short-term and intermediate-term aggregate exposures take into account residential exposure plus chronic exposure to food and water (considered to be a background exposure level). Hexythiazox 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. *Aggregate cancer risk for U.S. population.* Hexythiazox has been classified as a Category C possible human carcinogen ($Q_1^* = 2.22 \times 10^{-2}$). Using the exposure assumptions discussed in this unit for cancer, the carcinogenic risk estimate from food for

the general U.S. population is 2.5×10^{-7} . There is potential for chronic dietary exposure to hexythiazox in drinking water. After calculating DWLOCs and comparing them to the EECs for surface water and ground water, EPA does not expect the estimated cancer risk for aggregate exposure to exceed 1×10^{-6} as shown in the following Table 4: