

model) before using PRZM/EXAMS (a tier 2 model). The FIRST model is a subset of the PRZM/EXAMS model that uses a specific high-end runoff scenario for pesticides and an index reservoir with the percent crop area adjustment.

None of these models include consideration of the impact processing (mixing, dilution, or treatment) of raw water for distribution as drinking water would likely have on the removal and transformation of pesticides from the source water. The primary use of these models by the Agency at this stage is to provide an initial screen for sorting out pesticides for which it is highly unlikely that drinking water concentrations would ever exceed human health levels of concern.

Since the models used are considered to be screening tools in the risk assessment process, the Agency does not use estimated environmental concentrations EECs from these models to quantify drinking water exposure and risk as a percent of reference dose or percent of population adjusted dose (%RfD or %PAD). Instead, drinking water levels of comparison (DWLOCs) are calculated and used as a point of comparison against the model estimates of a pesticide's concentration in 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 from residential uses. Since DWLOCs address total aggregate exposure to hydramethylnon they are further discussed in the aggregate risk sections in Unit III.E.

Based on the FIRST and SCI-GROW models the EECs of hydramethylnon for acute exposures are estimated to be 76.09 parts per billion (ppb) for surface water and 0.035 ppb for ground water. The EECs for chronic exposures are estimated to be 1.45 ppb for surface water and 0.035 ppb for ground water.

3. *From non-dietary exposure.* The term "residential exposure" is used in this document to refer to non-occupational, non-dietary exposure (e.g., for lawn and garden pest control, indoor pest control, termiticides, and flea and tick control on pets).

Hydramethylnon is currently registered for use on the following residential non-dietary sites: Hydramethylnon is used as a bait in child resistant packaging (CRP) and as a gel bait to control ants and roaches indoors, and as a granular formulation to control ants in yards and on lawns. It is also applied by pest control operators (PCOs) in the same forms for indoor and outdoor pest control. The risk assessment was conducted using the following residential exposure

assumptions: The Agency has completed a non-dietary exposure and risk assessment for hydramethylnon including the following uses: residential consumers applying granular and gel formulations; children and adults contacting recreational turf or residential lawns treated with hydramethylnon; and toddlers' incidental nondietary ingestion of products applied around the home. Non-occupational handler exposures from the granular formulations applied to outdoor residential sites are assumed to be short-term in duration, based on rapid dissipation and insect foraging.

No chemical-specific data were submitted for the registration of hydramethylnon uses. Per an Agency policy, non-occupational handler assessments are based on surrogate unit exposures from the draft Standard Operating Procedures (SOPs) for Residential Exposure Assessments (12/18/97) and recommended approaches by the Agency's Exposure Science Advisory Committee (ExpoSAC). Updates to the Residential SOPs (02/01) alter the residential postapplication scenario assumptions. These updated assumptions are expected to better represent residential exposure and are still considered to be high-end, screening level assumptions. The non-occupational handler assessments for push type granular spreaders were based on surrogate unit exposures from two Outdoor Residential Exposure Task Force (ORETF) studies.

The ant bait stations containing hydramethylnon are in child-resistant packaging (CRP). The bait stations are supposed to be placed in less accessible locations such as in or under kitchen counters. However, handling or mouthing of the bait stations is the most commonly reported incidental "exposure" to hydramethylnon. Such exposures involve, at most, children mouthing the bait container with little or no contact with the actual bait. In the absence of an applicable acute dietary endpoint, and with the vast majority of incident data resulting in little or no health effects, no quantitative assessment of accidental exposure to the internal contents of bait stations was conducted. The gel product containing hydramethylnon is supposed to be applied in dime-sized portions in locations inaccessible to children. Accidental ingestion of gel from such application is considered unlikely and was therefore not assessed.

Adult consumer exposures when installing and removing bait stations are expected to be minimal. Consumer exposure when applying the gel compound from a syringe is considered

negligible. Limited accessibility (i.e., crack, crevice, behind appliances, in crawl spaces) of the gel and granular formulations when used by professional applicators in the home make it unlikely that residents would be exposed to these formulations indoors. For the proposed application of granules to outdoor residential sites, dermal MOEs calculated for non-occupational handlers were 10,000 or greater.

Dermal postapplication exposure from lawns treated with hydramethylnon granules at the maximum application rate of 2.2 lb product per acre (0.022 lb ai/A) were estimated using standard assumptions, as no chemical-specific residue data were available. For adults and children playing actively for two hours on a just-treated lawn, the estimated MOEs were 41,000 and 24,000, respectively. The aggregate (dermal, hand-mouth and object-mouth) MOE for a 15 kg child playing on a lawn was 4,000. The MOE for incidental ingestion of 3 mg of 1% hydramethylnon granules found on the surface of the lawn was 850. The hydramethylnon granules are formulated as small granules to allow for ant removal, and are therefore not easily noticed by a child, and ingestion is unlikely.

4. *Cumulative exposure to substances with a common mechanism of toxicity.* Section 408(b)(2)(D)(v) of the FFDCA requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider "available information" concerning the cumulative effects of a particular pesticide's residues and "other substances that have a common mechanism of toxicity."

EPA does not have, at this time, available data to determine whether hydramethylnon has a common mechanism of toxicity with other substances or how to include this pesticide in a cumulative risk assessment. Unlike other pesticides for which EPA has followed a cumulative risk approach based on a common mechanism of toxicity, hydramethylnon does not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has not assumed that hydramethylnon has a common mechanism of toxicity with other substances. For information regarding EPA's efforts to determine which chemicals have a common mechanism of toxicity and to evaluate the cumulative effects of such chemicals, see the final rule for Bifenthrin Pesticide Tolerances (62 FR 62961, November 26, 1997).