

rabbits, developmental toxicity was seen in the presence of maternal toxicity. A higher rate of abortions occurred at the highest dose level tested (250 mg/kg/day). An examination of the individual litter data provided no evidence as to whether or not the higher rate was due to maternal toxicity or developmental toxicity. Therefore, both the maternal and developmental NOAELs and LOAELs were based on this effect. In the 2-generation reproduction study and in the postnatal developmental toxicity study in rats, effects in the offspring were observed only at or above treatment levels which caused parental toxicity. Developmental (Offspring) effects in these two studies consisted of decreases in bwt and bwt gain of the pups in the presence of either decreased bwt and bwt gain or hematopoietic effects in the parents. There does not appear to be any increased susceptibility in rats or rabbits to *in utero* and/or postnatal exposure to mefenpyr-diethyl. Developmental effects were only observed at levels which were parentally toxic.

3. *Conclusion.* There is a complete toxicity data base for mefenpyr-diethyl and exposure data are complete or are estimated based on data that reasonably accounts for potential exposures. EPA determined that the 10X safety factor to protect infants and children should be removed. The FQPA factor is removed (i.e., reduced to 1) because there is no indication of increased susceptibility to infants and children, dietary exposure estimates are likely to result in an overestimate of the actual exposure, estimates for ground and surface source drinking water exposure are upper-bound concentrations and there are currently no registered residential uses and thus, this type of exposure to infants and children is not expected.

#### *E. Aggregate Risks and Determination of Safety*

To estimate total aggregate exposure to a pesticide from food, drinking water, and residential uses, the Agency calculates DWLOCs which are used as a 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) = 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 bwts. Default bwts and consumption values as used by EPA are used to calculate DWLOCs: 2 liter (L)/70 kg (adult male), 2L/60 kg (adult female), and 1L/10 kg (child). Default bwts 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 the Agency has reliable data) would not result in unacceptable levels of aggregate human health risk at this time. Because the Agency 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, the Agency 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.* No acute endpoint was identified, therefore, no acute risk is expected.

2. *Chronic risk.* EPA has concluded that exposure to mefenpyr-diethyl from food will utilize less than 1% of the cPAD for the U.S. population and all population subgroups. (Table 2). There are no residential uses for mefenpyr-diethyl that result in chronic residential exposure to mefenpyr-diethyl. The following table represents the results of the Tier 1 chronic dietary (food only)

exposure analysis for mefenpyr-diethyl proposed uses on barley and wheat.

TABLE 2.—EXPOSURE AND RISK ESTIMATES FOR DIETARY (FOOD ONLY) EXPOSURE TO MEFENPYR-DIETHYL.

Population Subgroup	Estimated Dietary Exposure, mg/kg bwt/day	% cPAD
U.S. population	0.000113	<1%
All infants (< 1 year)	0.000068	<1%
Children (1–2 years)	0.000295	<1%
Children (3–5 years)	0.000273	<1%
Children (6–12 years)	0.000186	<1%
Youth (13–19 years)	0.000107	<1%
Adults (20–49 years)	0.000091	<1%
Females (13–49 years)	0.000082	<1%
Adults (50+ years)	0.000074	<1%

This exposure analysis and cPAD represents a conservative estimate of dietary (food only) exposure and risk from the use of mefenpyr-diethyl on barley and wheat. Further refinement, through the use of anticipated residues, percent-of-crop treated estimates and/or monitoring data, would result in a reduction in the exposure estimates and the associated risk. However, in this analysis, even without further refinement, the risk estimate for all population subgroups is less than 1% of the cPAD. This is below the Agency's level of concern (100% of the cPAD) for the general U.S. population and all population subgroups.

However, there is potential for chronic dietary exposure to mefenpyr-diethyl in drinking water. The EECs for surface water and ground water are less than the DWLOC. Thus, EPA does not expect the aggregate exposure to exceed 100% of the cPAD, as shown in Table 3 below.