dairy barns (milk rooms). Because a variety of application equipment could be used to treat these sites, depending on product formulation, the specific pest problem and personal preference of the applicator, EPA evaluated several studies, each using a variety of application equipment. Since these studies varied in design, it was not possible to pool the data into one large data set. Therefore, EPA calculated exposures separately for each study design, using correction factors for protective clothing where necessary. Normal work clothing (i.e., long sleeve shirt and long pants) was assumed to offer 50 percent protection, while gloves, coveralls and shoes were assumed to decrease exposure 90 percent. This approach resulted in a range of estimated exposures for each of the three sites. Table 1 in Unit II.C.2. of this document summarizes these data.

The potential exposure of applicators using household aerosol products was not directly addressed in earlier Agency assessments. Since that time, EPA has received a study monitoring the exposure of individuals during application of a one percent propoxur aerosol product. This study can be used as a surrogate study for aerosol products containing dichlorvos. EPA believes that application of one entire can of

pressurized aerosol represents a reasonable exposure estimate for acute exposure scenarios. This may be a conservative estimate in that not every resident will use an entire can at one time: however, it is reasonable to assume that some individuals may choose to apply an entire can. Exposure estimates were calculated for four different clothing scenarios: (1) Long sleeve shirt, long pants, and shoes; (2) short sleeve shirt, long pants, and shoes; (3) short sleeve shirt, shorts, and shoes; and (4) and minimal clothing consisting of shorts and shoes only. EPA is using a conservative clothing assumption of only shorts and shoes because insects may present the greatest nuisance in the summer when residents are likely to wear the least amount of clothing.

EPA has also estimated exposures for individuals occupying or reentering residences following treatment of rooms with a total release fogger. These exposure estimates are also applicable to individuals reentering homes following crack and crevice treatment and aerosol spray application. The exposure estimates are based on a study that measured potential exposure by monitoring urinary amounts of dimethyl phosphate (DMP), a metabolite of dichlorvos, and by using whole body dosimeters consisting of cotton shirts,

tights, gloves, socks and underpants. Because it appears that dichlorvos passed through the dosimeters, use of the dosimeter data alone would underestimate exposure. Therefore, EPA calculated total exposure by adding the biomonitoring component and the amount trapped by the whole body dosimeters. This is a conservative approach because it assumes that the entire amount of dichlorvos trapped in the clothing could serve as a pool for subsequent absorption. It is likely that some loss of dichlorvos from the clothing would occur and, therefore, would not be available for absorption. When biological monitoring alone is performed, it is not possible to separate the dermal and respiratory components of exposure. For this reason and because the study addresses a homeowner/ resident scenario where protective clothing and respiratory protection do not apply, EPA has not separated these components but rather addressed the total exposure of the volunteers without regard to route. In addition, EPA is unable to estimate daily exposure values because biomonitoring data were collected over a 2-day period in this study. Rather, EPA estimated total exposure to individuals performing activities at various intervals following treatment on 2 consecutive days.

TABLE 1.—SUMMARY OF DICHLORVOS NON-DIETARY RISKS

Uses	Notes	Exposure (mg/kg/day)		Exposure Pat-	Margin of Exposure (Cho-
		Dermal	Inhalation	tern ₁	linesterase In- hibition)
Domestic Dwellings (application)	2				
Pressurized aerosol	3	0.097	3.3 x 10 ⁻⁷	Short-term	47
Crack and crevice treat- ment	4	0.018	2.3 x 10 ⁻⁴	Long-term	23
Domestic Dwellings (post-application)		No data			
Total release fogger	5		0.03	Short-term	17
Pressurized aerosol	6 7		0.03	Short-term	17
Crack and crevice treat- ment	7		0.03	Long-term	2
Resin pest strips	8		2.5 x 10 ⁻³	Long-term	20
Pet flea collars	9		2.1 x 10 ⁻⁴	Long-term	240
Occupational Exposure	10				
Crack & crevice treatment in homes	11	0.078	negligible	Long-term	6
Mushroom House	12				