

TABLE 1.—SUBCHRONIC, CHRONIC, AND OTHER TOXICITY—Continued

Guideline Number	Study Type	Results
870.3200	Dermal Toxicity - Rat	NOAEL = 47 mg ai/kg/day (males and females) LOAEL = 93 mg ai/kg/day (males and females), based on loss of muscle coordination and increased incidence of tremors.
870.7485	Metabolism - Rat	<p>Very little of the administered radioactive dose was expired as $^{14}\text{C-CO}_2$ (0.028% for males and 0.053% for females). The majority (about 70%) of the administered radioactivity was found in the feces with about 20% in the urine. A complication of this study is that males were administered a radioactive dose with the label in the acid position, while females were administered a radioactive dose with the label in the alcohol position. This could make comparisons between males and females difficult. Despite the difference in ^{14}C-labeling position in the bifenthrin administered to males and females, the study is acceptable. This conclusion is based on the fact that most (>90%) of the radioactivity was eliminated via the urine and feces, with no significant differences between the sexes in this respect. Further, there were no significant differences between dosage groups in percentages excreted. This suggests that most of the compound is excreted with little or no change, or in a form incorporating both of the labeled sites. The results also show that females retained slightly more radioactivity in their bodies (particularly in adipose tissue) than did males, particularly at the high-dose. Labeling of the material given to the females was in the biphenyl group, and, given a splitting of the molecule between the two labeling sites, this would have tended to give a more lipophilic radiolabeled residue.</p> <p>Classification: Acceptable-Guideline</p>
870.7485	Metabolism - Rat	<p>Plasma radioactivity in the low-dose (4 mg/kg) animals after dosing slowly rose, indicating a slow rate of absorption from the gastrointestinal tract. The half-life of absorption was calculated to be about 1.5 hours, with a lag-time of 0.5 hours following first order kinetics. Radioactivity peaked in plasma for low-dose animals in 4 hours. The elimination of ^{14}C-bifenthrin from the plasma was equally slow, with significant radioactivity still remaining in blood at 72 hours. Plasma radioactivity in the high-dose (35 mg/kg) animals appeared to follow a similar course as seen in the low-dose animals. The peak radioactivity for the high-dose group appeared to be somewhat delayed, peaking at about 6 hours. Significant radioactivity still remained after 72 hours in the high-dose animals.</p> <p>Classification: Acceptable-Guideline</p>
870.7485	Metabolism - Rat	<p>The major metabolic route of radiolabeled bifenthrin appeared to be hydrolysis of the ester linkage with oxidation of the resulting alcohol to the acid. Protein binding of radioactive components or metabolites appears to increase with time.</p> <p>Classification: Acceptable-Guideline</p>
870.7485	Metabolism - Rat	<p>Fat and skin half-lives were the longest with half-lives of 51 and 50 days, respectively. The half-lives for ovaries, liver, kidneys and sciatic nerve were 37.4, 19.0, 28.5, and 42 days, respectively. Radioactive components were measured in fat at numerous time intervals, before and after daily dosing. The major component in fat is parent compound with a half-life of 47.5 days. Other unidentified components included a somewhat polar ($R_f = 0.65$) compound and two other relatively minor components.</p> <p>Classification: Acceptable-Guideline</p>
870.7485	Metabolism - Rat	<p>Within 7 days, nearly all bifenthrin and/or metabolites were excreted in either urine or feces. The majority of radioactivity was excreted in the feces within 48 hours. Tissues that retained bifenthrin and/or metabolites beyond 7 days included fat and skin in males and females, and gonads in females.</p> <p>Classification: Unacceptable-Guideline. Although the number of animals/group in this study was 3, and not 5/sex/group as recommended by guidelines, and a quality assurance statement was lacking, the results of this study provide useful information.</p>