

Table 1. Health Effect Levels of Phenothrin in Laboratory Animals

| Route | Duration | Species | NOAEL | LOAEL | Organ/Effect | Comments | Reference |
|---------------------------------------|--------------------|---------|-----------------------|------------------------------------|---|--|---------------------------------|
| Acute Duration Toxicity | | | | | | | |
| dermal | once | rat | | >5,000 mg/kg | LD ₅₀ | | WHO 1990 |
| dermal | once | mouse | | >5,000 mg/kg | LD ₅₀ | | WHO 1990 |
| oral | once | rat | | >500 to >10,000 mg/kg | LD ₅₀ | | HSDB 2005 |
| oral | once | rat | | >5,000 to >10,000 mg/kg | LD ₅₀ | | WHO 1990 |
| oral | once | mouse | | >500 to >10,000 mg/kg | LD ₅₀ | | HSDB 2005 |
| oral | once | mouse | | >5,000 to >10,000 mg/kg | LD ₅₀ | | WHO 1990 |
| oral | 5 days | rat | 5,000 mg/kg/day | | No neurotoxic effects observed. | 1 female rat died; signs of poisoning were noted in several rats, but signs disappeared rapidly at end of treatment and there were no other signs of poisoning. | Okuno et al. 1978 (WHO 1990) |
| inhalation | 4 hr | rat | | >1,210 to >3,760 mg/m ³ | LC ₅₀ | | WHO 1990 |
| inhalation | 4 hr | mouse | | >1,210 to >1,180 mg/m ³ | LC ₅₀ | | WHO 1990 |
| inhalation | 4 hrs/day 5 wks | rat | 210 mg/m ³ | | | No adverse toxicological effects observed. | Kohda et al. 1979 (WHO 1990) |
| inhalation | 4 hrs/day 5 wks | mouse | 210 mg/m ³ | | | No adverse toxicological effects observed. | Kohda et al. 1979 (WHO 1990) |
| Intermediate Duration Toxicity | | | | | | | |
| oral (diet) | 6 months | rat | 1,000 mg/kg | 3,000 mg/kg | Elevated serum albumin level; elevated albumin-globulin ratio; increased absolute and relative liver weights. | No significant effect on mortality, clinical signs, ophthalmology, urinalysis, or gross and histopathological findings. 1 g/kg = 55.4 mg/kg/d Males; 1 g/kg = 63.3 mg/kg/d Females | Murakami et al. 1981 (WHO 1990) |

Table 1. Health Effect Levels of Phenothrin in Laboratory Animals (continued)

| Route | Duration | Species | NOAEL | LOAEL | Organ/Effect | Comments | Reference |
|--|---------------------|---------|----------------------------------|------------------------------------|--|--|---------------------------------|
| oral (diet) | 26 weeks | dog | 300 mg/kg | 1,000 mg/kg | Elevated alkaline phosphatase activity. | No abnormal findings in mortality, clinical signs, body weight, ophthalmology, gross or microscopic pathology, hematology, or urinalysis. | Pence et al. 1981 (WHO 1990) |
| Chronic Duration Toxicity | | | | | | | |
| oral (diet) | 52 weeks | dog | 300 mg/kg (M) 1,000 mg/kg (F) | 1,000 mg/kg (M) 3,000 mg/kg (F) | Focal degeneration of the adrenal cortex; increased absolute and relative liver weights; decreases in erythrocytes, hemoglobin, hematocrit and total blood protein; histopathological alterations in adrenal glands and liver. | Focal degeneration of the adrenal cortex seen in 1 male dog fed 1,000 mg/kg and 4 dogs fed 3,000 mg/kg. Slightly enlarged hepatocytes in 1 male dog fed 1,000 mg/kg and 7 dogs fed 3,000 mg/kg. 300 mg/kg = 8.24 mg/kg/day - M 1,000 mg/kg = 26.77 mg/kg/day - F | Cox et al. 1987 (WHO 1990) |
| oral (diet) | 18 months | mouse | 300 mg/kg | 1,000 mg/kg | Statistically significant difference in lung amyloidosis. | Increased liver weight at 3,000 mg/kg. No significant increase in tumors attributed to phenothrin. | Murakami et al. 1980 (WHO 1990) |
| oral (diet) | 2 year | rat | 2,000 mg/kg | 6,000 mg/kg | Males showed a significant increase in serum glutamine-pyruvate aminotransferase activity. | No histopathological changes suggestive of oncogenicity found. | Hiromori et al. 1980 (WHO 1990) |
| oral (diet) | 104 weeks | mouse | 300 mg/kg (M) 1,000 mg/kg (F) | 1,000 mg/kg (M) 3,000 mg/kg (F) | Increase in relative liver weights; higher incidence of periacinar hepatocyte hypertrophy with cytoplasmic eosinophilia in males. | No statistically significant increase in liver tumors. 300 mg/kg = 40 mg/kg/day (M) 1,000 mg/kg = 164 mg/kg/day (F) | Amyes et al. 1987 (WHO 1990) |
| oral (diet) | 105 weeks | rat | 1,000 mg/kg | 3,000 mg/kg | Increase in relative liver weights; higher incidence of cystic dilatation of sinuses of mesenteric lymph nodes and periacinar hepatocytic hypertrophy in males. | No oncogenic activity. | Martin et al. 1987 (WHO 1990) |
| Developmental/Reproductive Toxicity | | | | | | | |
| oral | gestation days 6-18 | rabbit | 30 mg/kg | | No apparent teratogenic effect. | | Ladd et al. 1976 (WHO 1990) |

Table 1. Health Effect Levels of Phenothrin in Laboratory Animals (continued)

| Route | Duration | Species | NOAEL | LOAEL | Organ/Effect | Comments | Reference |
|----------------------|---------------------|----------------|-----------------|--------------|---|-----------------|-------------------------------------|
| oral (intubation) | gestation days 6-18 | rabbit | 1,000 mg/kg/day | | No abnormalities observed | | Rutter 1974 (WHO 1990) |
| oral | gestation days 7-12 | mouse | 3,000 mg/kg | | No adverse teratogenic or embryotoxic effects. | | Nakamoto et al. 1973 (WHO 1990) |
| oral (diet) | 3 generation | rat | 2,000 mg/kg | | No reproductive effects. | | Takatsuka et al. 1980 (WHO 1990) |
| oral (diet) | 2 generation | rat | 1,000 mg/kg | 3,000 mg/kg | F ₀ and F ₁ females and selected F _{2B} male and female weanlings showed a slight but consistent increase in relative liver weights. | | Tesh et al. 1978 (WHO 1990) |