

TABLE 1.—GLUFOSIANTE-AMMONIUM: ACUTE, SUBCHRONIC, CHRONIC, AND OTHER TOXICITY—Continued

Guideline No.	Study Type	Results
870.5500	Bacterial DNA damage or repair test	glufosinate ammonium failed to cause damage to DNA that could be detected by this repair assay
870.5550	Unscheduled DNA synthesis in mammalian cells in culture	There was no evidence that unscheduled DNA synthesis was induced by glufosinate ammonium.
870.6200	Acute neurotoxicity in rat (2 studies)	NOAEL = 500 mg/kg in males and females (HDT) LOAEL = Not established in both sexes
870.6200	Repeat Dose Neurotoxicity in rat	NOAEL = 1.5 mg/kg/day in males, 1.8 mg/kg/day in females LOAEL = 14.9 mg/kg/day in males, 17.1 mg/kg/day in females, based on the inhibition of glutamate synthetase in the brain
870.7485	Metabolism and pharmacokinetics in rat	The majority of the radioactivity (95–98% of the dose) was eliminated during the first 24 hrs after dosing. The parent compound, glufosinate ammonium, accounted for most of the eliminated radioactivity in the urine and feces of both males (80% of the dose) and females (73% of the dose). The metabolite, 3-methylphosphinico-propionic acid, was consistently found in both urine and feces of both sexes.
870.7485	Metabolism and pharmacokinetics in rat	The majority of the radioactivity was eliminated during the first 24 to 48 hrs after dosing. The parent compound, glufosinate ammonium, accounted for the majority of the radioactivity eliminated in the excreta of both males (≈80% of the dose) and females (88% of the dose). The metabolite, 3-methylphosphinico-propionic acid, was consistently found in both urine (0.22–1.20% of the dose) and feces (0.44–1.36% of the dose) of both sexes. 2-acetamido-4-methylphosphinico-butanoic acid was found in feces (0.28–1.72% of the dose) of both male and female rats and barely above or at the level of the detection in the urine of both sexes (0.02–0.04% of the dose). Very little if any of administered glufosinate ammonium was sequestered in any tissues examined.
870.7485	Metabolism and pharmacokinetics in rat	The major route of excretion was via feces (88% and 84% of the administered radioactivity for males and females, respectively). Within 7 days of post dosing, greater than 94% of the dose was eliminated. Kinetics analysis indicated that the process of excretion was a two-phase process. The tissue radioactivity level for kidneys, liver and gonads was just above the background level.
870.7485	Metabolism and pharmacokinetics in rat	The majority of the radioactivity was excreted within 24 hrs after the last dose. The major route of elimination was via feces. There was also a two-phased elimination process. More radioactivity was found in the tissues of animals dosed repeatedly than that of animals receiving a single dose.
870.7600	Dermal penetration	The results indicate that at the low dose (0.1 mg) 42.5 to 50.8% of the applied radioactivity was absorbed whereas at the high dose (10 mg) 26% was absorbed. After removal and washing of the treated skin a substantial amount of the radioactivity still remained in the skin, and it was gradually absorbed and eliminated. Radioactivity was found in both feces and urine samples, but the majority of glufosinate ammonium was eliminated in the urine. In all organs/tissues examined, radioactivity was found to reach a maximum level either at 4 or 10 hrs after exposure. Subsequently, the radioactivity dropped rapidly. The amount of radioactivity found in the brain was very minimal relative to that of kidneys and liver.

TABLE 2.—3-METHYLPHOSPHINICO-PROPIONIC ACID: SUBCHRONIC TOXICITY

Guideline No.	Study Type	Results
870.3100	90-Day dermal toxicity in rats	NOAEL = 102 mg/kg/day in males, 113 mg/kg/day in females LOAEL = 420 mg/kg/day in males, 439 mg/kg/day in females based on increased reticulocytes and increased absolute and relative liver weights in males
870.3100	90-Day dermal toxicity in mice	NOAEL = 1,121 mg/kg/day in males, 1,340 mg/kg/day in females LOAEL = Not established