

US EPA ARCHIVE DOCUMENT

Table 3. EPA reference doses (RfD) used in this analysis.

Pesticide	Reference Dose RfD (mg/kg/day)	Uncertainty Factor	Chlorpyrifos TEF	Critical Studies Used	Critical ChE Effect	NOEL Used (mg/kg bw)	Company Conducting Study	Study Date
acephate	0.0012	100	0.25	Rat - 90 day	plasma	0.12	Chevron Chemical	1987
azinphos methyl	0.0015	100	0.20	Dog - 1 year	RBC	0.15		
chlorpyrifos	0.0003	100*	1.00	Human - 28 day	brain	0.03	Dow Elanco	1972
diazinon	0.0007	30	0.43	Human	plasma	0.02		
dichlorvos	0.00017	300	1.76	Dog - 1 year	brain, RBC, plasma	0.05	AMVAC Chemical	1990
dimethoate	0.0005	100	0.60	Rat - 2 year	RBC	0.05	American Cyanamid	1986
ethion	0.0005	100	0.60	Human	plasma; brain	0.05	FMC	1970; 1988
malathion	0.04	100	0.01	Rat - 2 year	RBC, plasma	4.0	Moeller and Rifder	1962
methamidophos	0.001	100	0.30	Rat - 8 week	?	0.1		
methidathion	0.0015	100	0.20	Dog - 1 year	?	0.15		
methyl parathion	0.00002	1,000	15.00	Rat - 2 year	brain, RBC, plasma	0.02	Monsanto	1984
phosmet	0.003	300	0.10	Rat - 2 year	brain, RBC, plasma	1.1	Stauffer Chemical	1967
pirimphos methyl	0.00008	3,000	3.75	Human - 56 day	plasma	0.25	ICI Americas Corp.	1974, 1976

Source: EPA, Office of Pesticide Programs, January 1998.

RBC = red blood cell

ChE = cholinesterase inhibition

RfD or Reference Dose = derived from the NOEL in the "critical or most sensitive study which is then divided by a variable "uncertainty factor" and determined to be the daily dose or exposure at which no harm should occur over a lifetime.

A lower reference dose (RfD) means the pesticide is thought to be more potent.

NOEL = No Observed Adverse Effects Level

* The RfD we used for chlorpyrifos is based on the latest assessment by the EPA Health Effects Division, which has recommended adding a ten-fold safety factor to the present RfD of 0.003.