

APPENDIX A. Permethrin Multi-a.i. Product Analysis

PERMETHRIN

PRODUCT FORMULATIONS CONTAINING MULTIPLE ACTIVE INGREDIENTS

The Agency does not routinely include, in its risk assessments, an evaluation of mixtures of active ingredients, either those mixtures of multiple active ingredients in product formulations or those in the applicator's tank. In the case of the product formulations of active ingredients (that is, a registered product containing more than one active ingredient), each active ingredient is subject to an individual risk assessment for regulatory decision regarding the active ingredient on a particular use site. If effects data are available for a formulated product containing more than one active ingredient, they may be used qualitatively or quantitatively^{1 2}.

Currently, the Agency's guidance for assessing the potential risk of chemical mixtures is limited to human health applications (USEPA, 2000). However, the guidance includes principles for evaluating mixtures to assess potential interactive effects that are generally applicable. Consistent with EPA's Overview Document (USEPA, 2004), the Agency's mixture guidance (USEPA, 2000) discusses limitations in quantifying the risk of specified mixture when there is differential degradation, transport and fate of chemical components following environmental release or application. The LD50 values are potentially useful only to the extent that a wild mammal would consume plants or animals immediately after these dietary items were directly sprayed by the product. Increasing time post application, the differential rates of degradation, transport, etc. for the active ingredients in the formulation only permit a qualitative discussion of potential acute risk (USEPA 2004).

As discussed in USEPA (2000) a quantitative component-based evaluation of mixture toxicity requires data of appropriate quality for each component of a mixture. In this mixture evaluation LD50s, with associated 95% confidence intervals, are needed for the formulated product. The same quality of data is also required for each component of the mixture. Given that many of the formulated products do not have LD50 values of the required quality and since LD50 values are not available for all the components of these formulations a quantitative analysis of potential interactive effects is not possible.

In the case of permethrin, a qualitative examination of the trends in LD50 values, with the associated confidence intervals, across the range of percent active ingredient, show no discernable trends in potency that would suggest synergistic (i.e., more than additive) or antagonistic (i.e., less than additive) interactions. A majority of formulated products had

¹ Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs, Environmental Protection Agency (January 2004) (Overview Document).

² Memorandum to Office of Prevention, Pesticides and Toxic Substance, US EPA conveying an evaluation by the U.S. Fish and Wildlife Service and National Marine Fisheries Service of an approach to assessing the ecological risks of pesticide products (January 2004).

oral LD50 values >5000 mg/kg. Thirteen of the 22 products with definitive LD50 values <5000 mg/kg had associated 95% confidence intervals which overlapped with the confidence interval for permethrin (Male: 2450-5240 mg/kg, Female: 1790-2900 mg/kg). The remaining nine products (containing permethrin and piperonyl butoxide) had LD50 values below the confidence interval for permethrin; however, given the variability of the available oral acute toxicity data, the relative few products that fell near, but outside the confidence intervals are not considered toxicologically significant. Furthermore, other products (for example, Reg. Nos. 008329-00065 and 073748-00006) with similar or higher concentrations of permethrin and piperonyl butoxide, showed no evidence of interactive effects (oral LD50 values >5000 mg/kg).

Based on these evaluations of the best available data and the Agency's existing guidance it is reasonable to conclude that these formulations are reflecting an independent additive toxicity response and not an interactive effect. Given that the active and inert ingredients would not be expected to have similar mechanisms of action, metabolites or toxicokinetic behavior it is also reasonable to conclude that an assumption of dose-addition would be inappropriate. Consequently, an assessment of permethrin's potential effect on the CRLF, CCR, SFGS, SMHM, and BCB when it is co-formulated with other active ingredients can be based on the toxicity of permethrin.

PERMETHRIN PRODUCTS^{3,4}

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
BONIDE WASP & HORNET SPRAY	000004-00392	0.25	No Data	N/A	N/A	N/A
BONIDE TOTAL RELEASE INDOOR FOGGER	000004-00428	0.25	No Data	N/A	N/A	N/A
BONIDE YARD & PATIO FOGGER	000004-00429	0.15	No Data	N/A	N/A	N/A
BONIDE MOSQUITO INSECT SPRAY	000004-00454	0.25	>5000*			
RIGO'S BEST FLEA & TICK SPRAY	000070-00297	0.054	No Data	N/A	N/A	N/A
RIGO'S BEST FLEA & TICK DIP	000070-00299	3.48	No Data	N/A	N/A	N/A
PREVEL D	000100-01205	4	1750	1079-3730	70	43-149
TERRO INSECT KILLER	000149-00011	0.2	No Data	N/A	N/A	N/A
TERRO CARPENTER ANT AND TERMITE KILLER	000149-00015	0.5	No Data	N/A	N/A	N/A
DEXOL INDORE INSECT FOGGER II	000192-00185	0.435	No Data	N/A	N/A	N/A
DEXOL ANT, ROACH & SPIDER SPRAY	000192-00186	0.22	No Data	N/A	N/A	N/A
DEXOL FLEA FREE FOGGER	000192-00197	0.435	No Data	N/A	N/A	N/A
DEXOL HORNET & WASP KILLER 3	000192-00203	0.25	No Data	N/A	N/A	N/A
HI-POWER BRAND INDOOR INSECT FOGGER	000239-02626	0.4	No Data	N/A	N/A	N/A
FLEA-B-GON TOTAL FOGGER	000239-02676	0.4	No Data	N/A	N/A	N/A
ORTHO ANT KILLER SPRAY	000239-02678	0.2	>5000	N/A	N/A	N/A
FARNAM PURGE PLUS INSECTICIDE	000270-00278	45	No Data	N/A	N/A	N/A

³ From registrant submitted data to support registration. Compiled by Office of Pesticide Programs Registration and Health Effects Divisions.

⁴ Permethrin: LD50= (male) 3580 mg/kg, CI: 2450-5240 mg/kg ; (female) 2280 mg/kg, CI: 1790-2900 mg/kg

*LD50 value based on similar registered product.

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
REPEL-X RTU	000270-00294	0.1	No Data	N/A	N/A	N/A
FARNAM IGR FOGGER 301	000270-00297	0.435	No Data	N/A	N/A	N/A
EQUICARE FLYSECT SUPER 7 REPELLENT SPRAY	000270-00300	0.2	>5000	N/A	N/A	N/A
EQUICARE FLYSECT SUPER C REPELLENT CONCENTRATE	000270-00301	1	>5000	N/A	N/A	N/A
FARNAM X-5306-98	000270-00326	1	>5000	N/A	N/A	N/A
FARNAM X-5303-98	000270-00328	0.2	>5000	N/A	N/A	N/A
FARNAM X-5294-98	000270-00329	0.1	No Data	N/A	N/A	N/A
FARNAM B736 INSECTICIDE	000270-00330	34	No Data	N/A	N/A	N/A
SULFODENE SCRATCHEX FLEA AND TICK SPRAY FOR DOGS AND CATS	000270-00335	0.05	No Data	N/A	N/A	N/A
SULFODENE SCRATCHEX FLEA AND TICK KILLER FOR DOGS AND CATS	000270-00336	0.05	No Data	N/A	N/A	N/A
ADAMS EQUINE RESIDUAL FLY MIST/WIPE	000270-00347	0.2	>5000*	N/A	N/A	N/A
ADAMS ANIMAL REPELLENT CONCENTRATE	000270-00350	1	>5000*	N/A	N/A	N/A
ADAMS 14-DAY FLEA DIP	000270-00351	3	2250	1530-3290	68	46-99
FASTACT 2 LONG-ACTING FLEA AND TICK DIP	000270-00353	3	999	815-1225	30	24-37
MYCODEX PREMISE CONTROL ROOM FOGGER	000270-00355	0.435	No Data	N/A	N/A	N/A
MYCODEX "14" PET SPRAY	000270-00366	0.25	No Data	N/A	N/A	N/A
TCI KERNEL GUARD SUPREME	000400-00560	10.42	3302	2356-4627	344	245-482
AQUA-PERMANONE	000432-00796	20	1000	850-1200	200	170-240
PERMANONE 31% BUTACIDE 66% MANUFACTURING CONCENTRATE	000432-01150	31.28	No Data	N/A	N/A	N/A
SKEETER-MITE 150-750 ULV	000432-01233	1.5	>5000*	N/A	N/A	N/A
SKEETER-MITE 300-1500 ULV	000432-01234	3	No Data	N/A	N/A	N/A
OMEN 30-30 ULV	000432-01235	30	1396	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
OMEN 50-50	000432-01236	47.63	No Data	N/A	N/A	N/A
PERMANONE 31-66	000432-01250	31.28	No Data	N/A	N/A	N/A
PERMANONE READY-TO-USE INSECTICIDE	000432-01277	3.98	>5050	N/A	N/A	N/A
REAL-KILL AUTOMATIC INDOOR FOGGER II	000478-00126	0.4	>5000	N/A	N/A	N/A
SPRAYPAK FLYING AND CRAWLING INSECT KILLER	000498-00137	0.15	No Data	N/A	N/A	N/A
SPRAYPAK INDOOR INSECT FOGGER, FORMULA 3	000498-00146	0.4	No Data	N/A	N/A	N/A
CHASE-MM FLYING AND CRAWLING INSECT KILLER	000498-00149	0.22	No Data	N/A	N/A	N/A
SPRAYPACK FLYING & CRAWLING INSECT KILLER	000498-00150	0.2	No Data	N/A	N/A	N/A
SPRAYPAK INDOOR INSECT FOGGER FORMULA 4	000498-00161	0.3	No Data	N/A	N/A	N/A
SPRAYPAK INDOOR INSECT FOGGER FORMULA 5	000498-00162	0.4	No Data	N/A	N/A	N/A
SPRAYPAK INDOOR INSECT FOGGER FORMULA 6	000498-00163	0.2	No Data	N/A	N/A	N/A
SPRAYPAK FLYING & CRAWLING INSECT KILLER, FORMULA 3	000498-00171	0.435	No Data	N/A	N/A	N/A
SPRAYPAK INDOOR INSECT FOGGER WITH INSECT GROWTH REGULATOR	000498-00172	0.435	No Data	N/A	N/A	N/A
SPRAYPAK CRAWLING INSECT KILLER FORMULA 3	000498-00173	0.4	No Data	N/A	N/A	N/A
SPRAYPAK INSTITUTIONAL CRAWLING INSECT KILLER FORMULA 3	000498-00174	0.4	No Data	N/A	N/A	N/A
CHAMPION SPRAYON YARD & PATIO INSECT KILLER	000498-00183	0.15	No Data	N/A	N/A	N/A
CHAMPION SPRAYON WASP HORNET	000498-00185	0.25	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
KILLER FORMULA 2						
CHAMPION SPRAYON ANT & ROACH KILLER 4	000498-00187	0.25	No Data	N/A	N/A	N/A
KILL ZONE FLEA AND TICK KILLER 2000	000498-00189	0.2	No Data	N/A	N/A	N/A
WHITMIRE PT 19 DAIRY & FARM INSECT FOGGER AND REPELLENT	000499-00320	0.25	>2000	N/A	N/A	N/A
WHITMIRE PT 21 H DAIRY AND FARM INSECT FOGGER	000499-00331	0.5	No Data	N/A	N/A	N/A
WHITMIRE TC 104	000499-00404	0.4	No Data	N/A	N/A	N/A
WHITMIRE TC 152	000499-00446	30	1150	760-1740	345	228-522
TC 179	000499-00483	2.5	>5000*	N/A	N/A	N/A
TAT ROACH & ANT KILLER	000506-00166	0.22	No Data	N/A	N/A	N/A
PRENTOX PERM-X UL 30-30	000655-00811	30	>5000*	N/A	N/A	N/A
PERM-X UL 31-66	000655-00812	31	No Data	N/A	N/A	N/A
PRENTOX PERM-X UL 2-2	000655-00813	2	No Data	N/A	N/A	N/A
PERM- X UL 4-4	000655-00898	4	No Data	N/A	N/A	N/A
R & M AQUEOUS RESIDUAL FLEA & TICK #1	000769-00590	0.054	No Data	N/A	N/A	N/A
R&M PERMETHRIN FLEA & TICK DIP #2	000769-00594	3.48	No Data	N/A	N/A	N/A
SURECO AQUEOUS RESIDUAL FLEA & TICK SPRAY #2	000769-00619	0.05	No Data	N/A	N/A	N/A
SURECO SYNERGIZED PERMETHRIN POWDER #1	000769-00966	0.5	No Data	N/A	N/A	N/A
SURECO SYNERGIZED PERMETHRIN POWDER #2	000769-00967	0.25	No Data	N/A	N/A	N/A
ALLPRO EVOLUER 4-4 ULV	000769-00982	4	No Data	N/A	N/A	N/A
ALLPRO EVOLUER 30-30 ULV	000769-00983	30	No Data	N/A	N/A	N/A
SUMO 2-2 ULV	000769-00984	2	No Data	N/A	N/A	N/A
ALLPRO AQUALUER 20-20	000769-00985	20.6	>500 <5000	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
ALLPRO AQUALUER 30-30	000769-00987	30	>500 <5000	N/A	N/A	N/A
ATROBAN DELICE PLUS INSECTICIDE	000773-00072	1	No Data	N/A	N/A	N/A
ATROBAN EXTRA INSECTICIDE EAR TAGS	000773-00078	10	No Data	N/A	N/A	N/A
SYNERGIZED 5% PERMETHRIN POUR-ON	000773-00084	5	>5050	N/A	N/A	N/A
DURASECT II	001007-00091	5	>5000	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2412	001021-01542	2.016	No Data	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2417	001021-01545	6.68	>5000	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2449	001021-01548	10.67	3020	2590-3540	322	276-378
EVERCIDE INTERMEDIATE 2416	001021-01550	6.68	>5000	N/A	N/A	N/A
EVERCIDE PET DIP CONCENTRATE 2464	001021-01552	3.2	>5000	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2460	001021-01556	10.87	6470	4580-9140	703	498-994
EVERCIDE TOTAL RELEASE FOGGER 2485	001021-01558	0.4	No Data	N/A	N/A	N/A
EVERCIDE PRESSURISED PET AND PLANT SPRAY 2561	001021-01599	0.05	No Data	N/A	N/A	N/A
EVERCIDE RESIDUAL PRESSURIZED SPRAY 2581	001021-01607	0.2	No Data	N/A	N/A	N/A
EVERCIDE RESIDUAL PRESSURIZED SPRAY 2582	001021-01608	0.2	>5000	N/A	N/A	N/A
EVERCIDE TOTAL RELEASE FOGGER 2620	001021-01623	0.4	No Data	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2132	001021-01659	8.9	>5000	N/A	N/A	N/A
EVERCIDE HOUSE & GARDEN SPRAY 2664	001021-01667	0.2	>5000*	N/A	N/A	N/A
EVERCIDE CONCENTRATE 2647	001021-01669	2	No Data	N/A	N/A	N/A
EVERCIDE TOTAL RELEASE FOGGER 2613	001021-01673	0.4	>5000	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2656	001021-01677	6.664	2370	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
EVERCIDE CONCENTRATE 2654	001021-01695	12.5	2880	N/A	360	N/A
EVERCIDE CARPET & SURFACE SPRAY 2655	001021-01696	0.2	2880*	N/A	6	N/A
EVERCIDE ROACH & ANT SPRAY 2639	001021-01698	0.2	>5000	N/A	N/A	N/A
EVERCIDE CARPET & SURFACE SPRAY 2657	001021-01702	0.2	>5000	N/A	N/A	N/A
SIVAD FOGGER	001021-01714	0.435	No Data	N/A	N/A	N/A
EVERCIDE HOUSE & GARDEN SPRAY 21321	001021-01715	0.2	No Data	N/A	N/A	N/A
EVERCIDE PRESSURIZED PET SPRAY 2642	001021-01725	0.05	>5000	N/A	N/A	N/A
EVERCIDE MICROEMULSION PET PUMP SPRAY 2649	001021-01726	0.1	>5000	N/A	N/A	N/A
EVERCIDE SYNERGIZED PERMETHRIN POUR-ON 2783	001021-01739	1	>5000	N/A	N/A	N/A
EVERCIDE SYNERGIZED PERMETHRIN POUR-ON 2803	001021-01783	0.5	>5000*	N/A	N/A	N/A
EVERCIDE CONCENTRATE 2801	001021-01789	10	3920*	N/A	392	N/A
EVERCIDE CARPET & SURFACE SPRAY 28021	001021-01790	0.2	>5000	N/A	N/A	N/A
EVERCIDE INTERMEDIATE 2802	001021-01791	6.664	2370*	N/A	157	N/A
EVERCIDE CARPET & SURFACE SPRAY 28011	001021-01792	0.2	No Data	N/A	N/A	N/A
EVERCIDE ANT AND ROACH SPRAY 21322	001021-01808	0.2	>5000*	N/A	N/A	N/A
EVERCIDE TOTAL RELEASE FOGGER 24601	001021-01809	0.4	6470*	4580-9140	26	18-37
EVERCIDE HORSE & DOG SPRAY 28022	001021-01817	0.2	No Data	N/A	N/A	N/A
EVERCIDE TOTAL RELEASE FOGGER 24602	001021-01831	0.8	>5000	N/A	N/A	N/A
EVERCIDE PERMETHRIN 10/10	001021-01834	10	1030	550-1750	103	55-175

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
PERMETHRIN 7.4%	001021-01841	7.4	>5050*	N/A	N/A	N/A
PERMETHRIN 1% POUR ON SYNERGIZED	001021-01846	1	No Data	N/A	N/A	N/A
ZEP DOUBLE SHOT II	001270-00253	0.2	No Data	N/A	N/A	N/A
ABSORBINE ULTRASHIELD BRAND RESIDUAL INSECTICIDE & REPELLENT	001543-00012	0.5	No Data	N/A	N/A	N/A
ABSORBINE ULTRASHIELD BRAND RESIDUAL INSECTICIDE & REPELLENT TOWELETTE	001543-00013	0.4	No Data	N/A	N/A	N/A
WFY0301	001543-00015	0.5	No Data	N/A	N/A	N/A
GRANT'S KILLS ANTS ANT & SPIDER KILLER	001663-00034	0.25	No Data	N/A	N/A	N/A
GRANTS FLYING INSECT KILLER	001663-00035	0.15	>5000*	N/A	N/A	N/A
P-O-W PLUS	001769-00370	0.25	No Data	N/A	N/A	N/A
DROP DEAD II	001769-00371	0.2	No Data	N/A	N/A	N/A
GORDON'S HORSE & PONY SPRAY	002217-00479	0.5	>2000	N/A	N/A	N/A
GORDON'S WASP & HORNET SPRAY	002217-00881	0.25	No Data	N/A	N/A	N/A
PREVENTIC L.A. IGR	002382-00124	2	>5010	N/A	N/A	N/A
DUOCIDE L.A.	002382-00126	0.108	No Data	N/A	N/A	N/A
DUOCIDE L.A. IGR	002382-00128	0.1	>5010	N/A	N/A	N/A
PERMETHRIN - IGR # 1 FLEA AND TICK SPRAY FOR DOGS	002382-00134	1	No Data	N/A	N/A	N/A
PERMETHRIN-PYRIPROXYFEN RESIDUAL SHAMPOO FOR DOGS #1	002382-00155	1	>5010	N/A	N/A	N/A
PERMETHRIN-PYRIPROXYFEN RESIDUAL SHAMPOO FOR DOGS #2	002382-00156	1	No Data	N/A	N/A	N/A
KNOCKOUT FLEA & TICK CARPET SPRAY #1	002382-00158	0.5	No Data	N/A	N/A	N/A
ZEMA RESIDUAL FLEA & TICK SPRAY FOR DOGS	002382-00178	0.05	No Data	N/A	N/A	N/A
ZEMA IGR TOTAL RELEASE FOGGER	002382-00184	0.435	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
SERGEANT'S SKIP-FLEA AND TICK SHAMPOO PLUS CONDITIONER FOR DOGS	002517-00063	0.1	>5000	N/A	N/A	N/A
SERGEANT'S SKIP FLEA & TICK SPRAY SHAMPOO PLUS CONDITIONER FOR DOGS	002517-00066	0.1	No Data	N/A	N/A	N/A
SERGEANT'S FLEA AND TICK DIP	002517-00067	1.6	>5000	N/A	N/A	N/A
SERGEANT'S MULTIPURPOSE FLEA & TICK KILLER I	002517-00069	0.05	No Data	N/A	N/A	N/A
SERGEANT'S RESIDUAL FLEA AND TICK SPRAY	002517-00070	0.05	No Data	N/A	N/A	N/A
SERGEANT'S RESIDUAL FLEA & TICK SPRAY II	002517-00071	0.101	No Data	N/A	N/A	N/A
SERGEANT'S FLEA & TICK POWDER WITH PYRETHRINS	002517-00072	0.5	No Data	N/A	N/A	N/A
SERGEANT'S FLEA & TICK POWDER WITH PERMETHRIN	002517-00073	0.5	No Data	N/A	N/A	N/A
SERGEANT'S FLEA & TICK SPRAY	002517-00074	0.8	No Data	N/A	N/A	N/A
SERGEANT'S X-TERM FOGGER WITH NYLAR	002517-00075	0.4	No Data	N/A	N/A	N/A
SPI # 8325	002517-00079	0.1	No Data	N/A	N/A	N/A
SERGEANT'S DOG SHAMPOO	002517-00082	0.1	>5000	N/A	N/A	N/A
SERGEANT'S PRETECT SQUEEZE-ON FLEA & TICK CONTROL FOR DOGS	002517-00087	45	>5000	N/A	N/A	N/A
SQUEEZE-ON FLEA & TICK CONTROL FOR DOGS & PUPPIES	002517-00089	45	No Data	N/A	N/A	N/A
SERGEANT'S GOLD SQUEEZE-ON FOR DOGS	002517-00094	45	No Data	N/A	N/A	N/A
HARTZ REF. 101	002596-00146	45	No Data	N/A	N/A	N/A
ZOECON RF-299 RTU CARPET PUMP SPRAY	002724-00401	0.28	>5100	N/A	N/A	N/A
ZOECON 9026 FOGGER	002724-00454	0.58	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
ZOECON 9204 FOGGER	002724-00457	0.58	No Data	N/A	N/A	N/A
SANDOZ 9309 FOGGER	002724-00464	0.95	No Data	N/A	N/A	N/A
SANDOZ 9311 AEROSOL	002724-00465	0.95	No Data	N/A	N/A	N/A
SANDOZ 9404 SPRAY	002724-00483	0.5	No Data	N/A	N/A	N/A
RF 9910 AEROSOL	002724-00490	0.35	>5000	N/A	N/A	N/A
RF9908 SPOT ON	002724-00497	45	No Data	N/A	N/A	N/A
DEPUTY DOG FLEA & TICK ARREST	002724-00576	0.054	No Data	N/A	N/A	N/A
SPI RESIDUAL FLEA AND TICK SPRAY FOR DOGS AND CATS I	002724-00586	0.05	No Data	N/A	N/A	N/A
SPI RESIDUAL FLEA AND TICK SPRAY FOR DOGS AND CATS II	002724-00587	0.11	No Data	N/A	N/A	N/A
SPI RESIDUAL PRESSURIZED SPRAY I	002724-00591	0.22	No Data	N/A	N/A	N/A
SPI RESIDUAL PRESSURIZED SPRAY II	002724-00592	0.2	No Data	N/A	N/A	N/A
SPEER RESIDUAL FLEA AND TICK DIP	002724-00593	3.2	No Data	N/A	N/A	N/A
MUG-A-BUG TOTAL RELEASE AEROSOL FOGGER I	002724-00613	0.4	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #2	002724-00619	0.075	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS KILLER #3	002724-00620	0.1	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #4	002724-00621	0.125	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #5	002724-00622	0.125	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS KILLER #6	002724-00630	0.3	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #7	002724-00631	0.3	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #8	002724-00632	0.4	No Data	N/A	N/A	N/A
SPEER PY-PERM AQUEOUS INSECT KILLER #9	002724-00633	0.4	No Data	N/A	N/A	N/A
SPEER PY-PERM TOTAL RELEASE	002724-00634	0.3	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
INDOOR FOGGER						
SPEER PY-PERM TOTAL RELEASE INDOOR FOGGER II	002724-00635	0.4	No Data	N/A	N/A	N/A
SPEER NEOPERM TOTAL RELEASE INDOOR FOGGER	002724-00636	0.2	No Data	N/A	N/A	N/A
SPEER NEOPERM YARD & PATIO	002724-00637	0.15	No Data	N/A	N/A	N/A
SPEER NEOPERM HOUSEHOLD CRAWLING INSECT KILLER	002724-00638	0.2	No Data	N/A	N/A	N/A
SPEER NEOPERM INDUSTRIAL CRAWLING INSECT KILLER	002724-00639	0.2	No Data	N/A	N/A	N/A
SPEER NEOPERM WASP & HORNET KILLER #1	002724-00640	0.25	No Data	N/A	N/A	N/A
SPEER NEOPERM WASP & HORNET KILLER #2	002724-00641	0.375	No Data	N/A	N/A	N/A
SPEER FLEA & TICK SPRAY IV	002724-00642	0.05	No Data	N/A	N/A	N/A
SPEER NEOPERM CRAWLING INSECT KILLER I	002724-00643	0.25	No Data	N/A	N/A	N/A
SPEER NEOPERM CRAWLING INSECT KILLER II	002724-00644	0.375	No Data	N/A	N/A	N/A
SPEER NEOPERM CRAWLING INSECT KILLER III	002724-00645	0.5	No Data	N/A	N/A	N/A
SPEER NEOPERM CRAWLING INSECT KILLER IV	002724-00646	0.25	No Data	N/A	N/A	N/A
SPEER NEOPERM TOTAL RELEASE INDOOR FOGGER IV	002724-00648	0.5	No Data	N/A	N/A	N/A
PURINA FLEA 'N TICK MIST	002724-00652	0.054	No Data	N/A	N/A	N/A
SPEER-IT FOGGER III WITH NYLAR	002724-00666	0.4	No Data	N/A	N/A	N/A
SPEER NEOPERM FLYING INSECT KILLER	002724-00669	0.2	No Data	N/A	N/A	N/A
NEOPERM INDUSTRIAL INSECT KILLER	002724-00670	0.2	No Data	N/A	N/A	N/A
SPEER PREMETHRIN DUSTING	002724-00672	0.5	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
POWDER						
SPEER PY-PERM AQUEOUS INSECT KILLER #2	002724-00674	0.2	No Data	N/A	N/A	N/A
SPEER ROACH SPRAY 1 WITH NYLAR	002724-00678	3.5	No Data	N/A	N/A	N/A
SPEER 3.5% PERMETHRIN DRY FOGGER WITH NYLAR	002724-00679	3.5	No Data	N/A	N/A	N/A
TETRAPERM WASP & HORNET KILLER FEQ 23 II	002724-00698	0.25	No Data	N/A	N/A	N/A
ELITE RESIDUAL FLEA AND TICK MIST	002724-00712	0.054	No Data	N/A	N/A	N/A
ELITE PERMETHRIN FLEA & TICK DIP II	002724-00715	3.48	No Data	N/A	N/A	N/A
ELITE RESIDUAL FLEA & TICK MIST II WITH ALOE & LANOLIN	002724-00721	0.101	No Data	N/A	N/A	N/A
ELITE HORSE SPRAY AND WIPE	002724-00725	0.2	No Data	N/A	N/A	N/A
ELITE RESIDUAL EQUINE & PET SPRAY II	002724-00726	0.5	>5000	N/A	N/A	N/A
PERMALOOL HOME & CARPET SPRAY	002724-00771	0.2	No Data	N/A	N/A	N/A
PERMALOOL PLUS FOGGER	002724-00772	0.5	>5000	N/A	N/A	N/A
PERMALOOL PLUS HOME AND CARPET SPRAY	002724-00773	0.2	>5000	N/A	N/A	N/A
PERMALOOL PLUS INVERTED CARPET SPRAY	002724-00774	0.2	>5000	N/A	N/A	N/A
PERMETHRIN PLUS FOGGER	002724-00778	0.5	No Data	N/A	N/A	N/A
PERMETHRIN PLUS HOME AND CARPET SPRAY	002724-00779	0.2	No Data	N/A	N/A	N/A
PERMETHRIN PLUS INVERTED CARPET SPRAY	002724-00780	0.2	No Data	N/A	N/A	N/A
PERMETHRIN PLUS PET SPRAY	002724-00782	0.2	No Data	N/A	N/A	N/A
PERMETHRIN PLUS PET SPRAY II	002724-00783	0.2	No Data	N/A	N/A	N/A
HAPPY JACK FLEA & TICK SPRAY	002781-00041	0.101	No Data	N/A	N/A	N/A
H806 INSECTICIDE	002781-00052	17	1171*	772-1776	199	131-302

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
SANITIZED VAN INTERIOR FOGGER	003090-00214	0.4	No Data	N/A	N/A	N/A
SHOO-FLY TERMITE & CARPENTER ANT KILLER	003546-00037	0.375	>5000*	N/A	N/A	N/A
SHOO-FLY HORNET WASP JET BOMB II	003546-00040	0.25	No Data	N/A	N/A	N/A
SHOOFLY FLYING INSECT KILLER	003546-00041	0.2	>5000*	N/A	N/A	N/A
WB TOTAL RELEASE FOGGER	003862-00125	0.435	No Data	N/A	N/A	N/A
ABC WASP AND HORNET SPRAY	003862-00174	0.25	>5000*	N/A	N/A	N/A
TRIPLE ACTION WASP AND HORNET KILLER	003862-00176	0.375	>5000*	N/A	N/A	N/A
#271 RAID ROACH & ANT KILLER AND TREATMENT	004822-00271	0.2	>5000	N/A	N/A	N/A
RAID FORMULA 274 INSECT KILLER	004822-00274	18.2	4930	4060-5800	898	739-1056
RAID FORMULA 277 INSECT KILLER	004822-00277	18.2	No Data	N/A	N/A	N/A
RAID FOGGER 15	004822-00321	0.8	No Data	N/A	N/A	N/A
RAID ANT & ROACH FORMULA 6	004822-00323	0.2	No Data	N/A	N/A	N/A
RAID ANT AND ROACH KILLER FORMULA D16	004822-00353	0.2	No Data	N/A	N/A	N/A
RAID ANT & ROACH KILLER 12	004822-00391	0.2	No Data	N/A	N/A	N/A
RAID YARD GUARD OUTDOOR FOGGER FORMULA VII	004822-00394	0.225	No Data	N/A	N/A	N/A
RAID ANT & ROACH KILLER 14	004822-00403	0.2	No Data	N/A	N/A	N/A
RAID WASP & HORNET KILLER XIII	004822-00423	0.124	No Data	N/A	N/A	N/A
RAID D.O.B.	004822-00442	1	>4000	N/A	N/A	N/A
RAID YARD GUARD OUTDOOR FOGGER FORMULA VII	004822-00450	0.225	No Data	N/A	N/A	N/A
WHITMIRE RESIDUAL FLEA AND TICK SPRAY FOR DOGS AND CATS	004822-00460	0.054	No Data	N/A	N/A	N/A
WHITMIRE RESIDUAL PRESSURIZED FLEA & TICK SPRAY	004822-00461	0.5	No Data	N/A	N/A	N/A
WHITMIRE FLEA AND TICK DIP	004822-00462	3.48	No Data	N/A	N/A	N/A
RAID ANT & ROACH KILLER 16	004822-00473	0.2	No Data	N/A	N/A	N/A

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			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
RAID ANT & ROACH KILLER 479	004822-00479	0.2	>5000	N/A	N/A	N/A
RAID - CK	004822-00488	1	No Data	N/A	N/A	N/A
WHITMIRE TC 85 TOTAL RELEASE INSECT FOGGER	004822-00500	1.5	5660	N/A	85	N/A
RAID FLK FORMULA H1A	004822-00513	0.1	>5000	N/A	N/A	N/A
RAID F1K FORMULA H2A	004822-00514	0.1	>5000*	N/A	N/A	N/A
RAID REACH & KILL OUTDOOR ANT & ROACH KILLER	004822-00533	0.2	No Data	N/A	N/A	N/A
RAID YARD GUARD PLD	004822-00551	0.225	No Data	N/A	N/A	N/A
HUB STATES CIK	005602-00209	0.375	No Data	N/A	N/A	N/A
SHIELD TOTAL RELEASE FOGGER VI	005693-00078	0.4	No Data	N/A	N/A	N/A
BLACK LEAF FOGG-IT HOME INSECT FOGGER	005887-00156	0.4	No Data	N/A	N/A	N/A
BLACK LEAF ROACH, ANT & SPIDER SPRAY	005887-00160	0.22	No Data	N/A	N/A	N/A
KONK INSECT KILLER	005978-00012	0.2	No Data	N/A	N/A	N/A
KONK INSECTICIDE FOAM	005978-00013	0.2	No Data	N/A	N/A	N/A
SUMMIT SUPER PERMACIDE II	006218-00079	0.25	>5000*	N/A	N/A	N/A
CESSCO FIRE ANT AND CRAWLING INSECT KILLER	006959-00092	0.5	No Data	N/A	N/A	N/A
CSA WB TOTAL RELEASE FOGGER #1	007056-00162	0.4	No Data	N/A	N/A	N/A
IQ MULTIPURPOSE HOUSE & GARDEN SPRAY	007056-00185	0.2	No Data	N/A	N/A	N/A
CHEMI-CAP TOTAL RELEASE INSECT FOGGER	007405-00070	0.4	No Data	N/A	N/A	N/A
CHEMI-CAP FLYING & CRAWLING INSECTICIDE II	007405-00073	0.2	No Data	N/A	N/A	N/A
CPC CRAWLING INSECT KILLER	007405-00075	0.375	No Data	N/A	N/A	N/A
ARI YARD & PATIO FORMULA 1	007754-00051	0.15	No Data	N/A	N/A	N/A
BIOMIST 3+15 ULV	008329-00033	3	No Data	N/A	N/A	N/A
BIOMIST 4+12 ULV	008329-00034	4	No Data	N/A	N/A	N/A

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			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
BIOMIST 4+4 ULV	008329-00035	4	No Data	N/A	N/A	N/A
ULV MOSQUITO MASTER 412	008329-00036	4	1836	1476-2285	73	59-91
BIOMIST 4 + 20 SPRAY	008329-00038	4	>5000	N/A	N/A	N/A
BIOMIST 1.5 + 7.5 ULV	008329-00040	1.5	>5000*	N/A	N/A	N/A
BIOMIST 12 + 60 ULV	008329-00041	12	>2000	N/A	N/A	N/A
BIOMIST 30+30 ULV	008329-00042	30	891	501-1584	267	150-475
BIOMIST 31 + 66 ULV	008329-00043	31.28	2100	1230-3585	657	385-1121
FLAK 2-2 RTU	008329-00050	2	No Data	N/A	N/A	N/A
FLAK 4-4	008329-00051	4	4054	N/A	162	N/A
FLAK 10-10	008329-00052	10	4054	N/A	405	N/A
FLAK 50-50	008329-00053	47.63	No Data	N/A	N/A	N/A
BIOMIST 2+2 ULV	008329-00063	2	>5000	N/A	N/A	N/A
MOSQUITO BEATER 4-4	008329-00064	4	>5000	N/A	N/A	N/A
PERMETHRIN/PBO 50/50	008329-00065	47.63	>5000	N/A	N/A	N/A
ULV MOSQUITO MASTER 2+6	008329-00073	2	No Data	N/A	N/A	N/A
HOT SHOT ROACH AND ANT KILLER - FORMULA PRWB-1	008845-00122	0.2	No Data	N/A	N/A	N/A
HOT SHOT FOGGER V	008845-00123	0.435	No Data	N/A	N/A	N/A
BLACK JACK FLY AND MOSQUITO KILLER	008848-00062	0.15	No Data	N/A	N/A	N/A
BLACK JACK JET ACTION CRAWLING INSECT SPRAY	008848-00063	0.25	No Data	N/A	N/A	N/A
BLACK JACK TOTAL RELEASE INDOOR FOGGER	008848-00065	0.2	No Data	N/A	N/A	N/A
BLACK JACK BULL'S EYE WASP & HORNET SPRAY	008848-00066	0.25	No Data	N/A	N/A	N/A
SAFEGAURD HOUSEHOLD ROACH AND INSECT KILLER AUTOMATIC INDOOR FOGGER	008848-00068	0.5	No Data	N/A	N/A	N/A
BLACKJACK CRAWLING INSECT	008848-00069	0.375	No Data	N/A	N/A	N/A

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			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
KILLER II						
BLACKJACK CRAWLING INSECT KILLER I	008848-00070	0.25	No Data	N/A	N/A	N/A
BLACK JACK PYRAPERM HOUSEHOLD INSECT KILLER WBA P59	008848-00074	0.2	No Data	N/A	N/A	N/A
LANDLORD'S OIL BASE CRAWLING INSECT KILLER	008848-00080	0.25	No Data	N/A	N/A	N/A
BLACK JACK HOUSE & GARDEN SPRAY LIQUID	008848-00083	0.2	No Data	N/A	N/A	N/A
COUNTRY VET FLEA & TICK FOGGER WITH GROWTH INHIBITOR	009444-00164	0.4	No Data	N/A	N/A	N/A
CRAWLING INSECT KILLER-MP	009444-00218	0.25	No Data	N/A	N/A	N/A
WASP, HORNET AND YELLOWJACKET KILLER	009444-00220	0.25	>5000*	N/A	N/A	N/A
HOME INSECT FOGGER	009444-00222	0.4	No Data	N/A	N/A	N/A
CHEMSICO PATIO SPRAY	009688-00110	0.05	No Data	N/A	N/A	N/A
CHEMSICO AEROSOL INSECTICIDE	009688-00111	0.2	No Data	N/A	N/A	N/A
CHEMSICO AEROSOL SPRAY A	009688-00112	0.2	>5050	N/A	N/A	N/A
CHEMSICO ORNAMENTAL, HOUSEPLANT & VEGETABLE SPRAY	009688-00115	0.02	No Data	N/A	N/A	N/A
CHEMSICO INDOOR & OUTDOOR SPRAY	009688-00116	0.15	No Data	N/A	N/A	N/A
CHEMSICO CONCENTRATE MP	009688-00120	1.25	>5050	N/A	N/A	N/A
CHEMSICO RTU MP	009688-00121	0.02	>5050	N/A	N/A	N/A
CHEMSICO AEROSOL MP	009688-00122	0.02	>5050	N/A	N/A	N/A
CHEMSICO WASP & HORNET KILLER S	009688-00141	0.25	No Data	N/A	N/A	N/A
CHEMSICO INSECTICIDE NT	009688-00159	0.5	>2000*	N/A	N/A	N/A
CHEMSICO WASP & HORNET KILLER FEQ 24	009688-00228	0.375	>5000*	N/A	N/A	N/A
CHEMSICO AEROSOL INSECTICIDE TPP	009688-00236	0.834	>2000*	N/A	N/A	N/A

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			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
CHEMSICO WASP & HORNET KILLER FEQ C24	009688-00247	0.375	No Data	N/A	N/A	N/A
FIEBING'S EQUILFEND FLYSPRAY FOR HORSES	009816-00003	0.05	No Data	N/A	N/A	N/A
WASP AND HORNET KILLER	010088-00091	0.25	No Data	N/A	N/A	N/A
SURFACE INSECTICIDE	010088-00092	0.25	No Data	N/A	N/A	N/A
CONTACT FLEA & TICK KILLER III	010806-00065	0.054	No Data	N/A	N/A	N/A
CONTACT ROACH AND ANT KILLER X	010806-00088	0.22	No Data	N/A	N/A	N/A
CONTACT WATER-BASED INDOOR FOGGER II	010806-00097	0.435	No Data	N/A	N/A	N/A
MISTY DUALCIDE P3	010807-00161	0.2	No Data	N/A	N/A	N/A
MISTY FOG PLUS FOGGER	010807-00162	0.3	No Data	N/A	N/A	N/A
MISTY INDUSTRIAL INSECT KILLER	010807-00188	0.2	No Data	N/A	N/A	N/A
MISTY WASP & HORNET KILLER IIB	010807-00196	0.25	No Data	N/A	N/A	N/A
MISTY ANTI-CRAWL III	010807-00197	0.25	No Data	N/A	N/A	N/A
MISTY WASP & HORNET KILLER IV	010807-00198	0.375	No Data	N/A	N/A	N/A
893 TOTAL RELEASE FOGGER II	010900-00098	0.4	No Data	N/A	N/A	N/A
SUNGRO SPRAY & DIP	011474-00086	0.05	No Data	N/A	N/A	N/A
WASP & HORNET KILLER V	011474-00092	0.25	No Data	N/A	N/A	N/A
K9 ADVANTIX 10	011556-00132	44	>2000	N/A	N/A	N/A
K9 ADVANTIX 20	011556-00133	44	>2000	N/A	N/A	N/A
K9 ADVANTIX 100	011556-00134	44	>2000	N/A	N/A	N/A
K9 ADVANTIX 55	011556-00135	44	>2000	N/A	N/A	N/A
TOTAL RELEASE FOGGER NO. II	011623-00035	0.4	No Data	N/A	N/A	N/A
THE END. WASP & HORNET KILLER	011694-00109	0.25	No Data	N/A	N/A	N/A
THE END	011694-00110	0.2	No Data	N/A	N/A	N/A
OMEGO MIST ULV	011930-00001	2	No Data	N/A	N/A	N/A
OMEGO MIST MAC	011930-00002	30	No Data	N/A	N/A	N/A
OMEGO MIST OSC	011930-00003	4	No Data	N/A	N/A	N/A

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			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
OMEGO MIST WET	011930-00005	20.6	No Data	N/A	N/A	N/A
RAINBOW TETRAPERM MULTIBUG KILLER	013283-00028	0.25	No Data	N/A	N/A	N/A
FOUR PAWS PROTECTOR.	013799-00026	0.054	No Data	N/A	N/A	N/A
BIO-GROOM FLEA & TICK-14 LONG LASTING RESIDUAL SPRAY WITH LANOLIN FOR	015297-00007	0.05	No Data	N/A	N/A	N/A
PYRANHA 1-10 PPC CONCENTRATE	021165-00023	4	No Data	N/A	N/A	N/A
PYRANHA SPACE SPRAY I-10 HPS CONCENTRATE	021165-00030	0.6	No Data	N/A	N/A	N/A
PYRANHA SPACE SPRAY I-10 HP CONCENTRATE	021165-00032	1.1	No Data	N/A	N/A	N/A
PYRANHA EQUINE SPRAY AND WIPE	021165-00033	0.5	No Data	N/A	N/A	N/A
PYRANHA INSECTICIDES AQUEOUS EQUINE FORMULATION	021165-00034	0.15	No Data	N/A	N/A	N/A
PYRANHA EQUINE SPRAY AND WIPE CONCENTRATE	021165-00039	0.6	No Data	N/A	N/A	N/A
PYRANHA AQUEOUS EQUINE SPRAY	021165-00050	0.1	>5000	N/A	N/A	N/A
PYRANHA 1-10 SBA CONCENTRATE	021165-00062	1.1	No Data	N/A	N/A	N/A
UNICORN 14-DAY FLEA & TICK SPRAY	028293-00147	0.05	No Data	N/A	N/A	N/A
UNICORN 14-DAY FLEA & TICK AEROSOL SPRAY	028293-00150	0.05	No Data	N/A	N/A	N/A
UNICORN PERTRAN AEROSOL	028293-00154	0.15	No Data	N/A	N/A	N/A
UNICORN KNOCKDOWN SPRAY	028293-00158	0.2	No Data	N/A	N/A	N/A
UNICORN HOME FOGGER	028293-00161	0.435	No Data	N/A	N/A	N/A
UNICORN 14-DAY FLEA AND TICK SPRAY II	028293-00166	0.101	No Data	N/A	N/A	N/A
UNICORN RESIDUAL HOUSE AND CARPET SPRAY	028293-00167	0.22	No Data	N/A	N/A	N/A
UNICORN LIQUID PLANT SPRAY NO. 1	028293-00185	0.054	No Data	N/A	N/A	N/A
UNICORN 14 DAY FLEA & TICK SPRAY	028293-00209	0.05	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
# 3						
UNICORN IGR TOTAL RELEASE FOGGER	028293-00214	0.4	No Data	N/A	N/A	N/A
HOUSE AND CARPET SPRAY #7	028293-00224	0.05	No Data	N/A	N/A	N/A
UNICORN HOUSE AND CARPET SPRAY #8	028293-00225	0.075	No Data	N/A	N/A	N/A
UNICORN HOUSE AND CARPET SPRAY #9	028293-00226	0.1	No Data	N/A	N/A	N/A
UNICORN RESIDENTIAL, INDUSTRIAL & GARDEN SPRAY #2	028293-00227	0.125	No Data	N/A	N/A	N/A
UNICORN HOUSE AND CARPET SPRAY #11	028293-00228	0.125	No Data	N/A	N/A	N/A
UNICORN AQUEOUS PRESSURIZED SPRAY	028293-00231	0.15	No Data	N/A	N/A	N/A
UNICORN HOUSEHOLD INSECT KILLER WBA	028293-00252	0.3	No Data	N/A	N/A	N/A
UNICORN INDUSTRIAL INSECT KILLER II	028293-00253	0.4	No Data	N/A	N/A	N/A
UNICORN HOUSEHOLD INSECT KILLER WBA II	028293-00254	0.4	No Data	N/A	N/A	N/A
UNICORN INDUSTRIAL INSECT KILLER WBA	028293-00255	0.3	No Data	N/A	N/A	N/A
UNICORN PET DIP CONCENTRATE	028293-00258	3.48	No Data	N/A	N/A	N/A
UNICORN SYNERGIZED POUR-ON INSECTICIDE	028293-00259	1	No Data	N/A	N/A	N/A
UNICORN INDUSTRIAL INSECT KILLER WBA II	028293-00269	0.2	No Data	N/A	N/A	N/A
UNICORN HOUSEHOLD INSECT KILLER WBA III	028293-00270	0.2	No Data	N/A	N/A	N/A
UNICORN WASP & HORNET KILLER II	028293-00281	0.1	No Data	N/A	N/A	N/A
UNICORN WASP & HORNET KILLER III	028293-00282	0.375	No Data	N/A	N/A	N/A
UNICORN CRAWLING INSECT KILLER	028293-00285	0.5	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
IV						
UNICORN CRAWLING INSECT KILLER III	028293-00286	0.375	No Data	N/A	N/A	N/A
UNICORN CRAWLING INSECT KILLER II	028293-00287	0.25	No Data	N/A	N/A	N/A
UNICORN SYNERGIZED POUR-ON INSECTICIDE II	028293-00288	5	No Data	N/A	N/A	N/A
UNICORN SYNERGIZED POUR-ON INSECTICIDE III	028293-00292	7.4	No Data	N/A	N/A	N/A
HAYMAKER FOGGING INSECT KILLER	040208-00002	0.2	No Data	N/A	N/A	N/A
KIBOSH WASP, HORNET, BEE, & YELLOW JACKET KILLER	040208-00007	0.25	No Data	N/A	N/A	N/A
ENFORCER ANT & ROACH KILLER III	040849-00033	0.22	No Data	N/A	N/A	N/A
ENFORCER FLEA & TICK SPRAY FOR PETS II	040849-00034	0.108	>5000	N/A	N/A	N/A
ENFORCER FLEA & ROACH FOGGER III	040849-00035	0.435	No Data	N/A	N/A	N/A
ENFORCER FLEA SPRAY FOR HOMES	040849-00053	0.27	>5000	N/A	N/A	N/A
ENFORCER FLEA FOGGER XX	040849-00056	0.435	No Data	N/A	N/A	N/A
ENFORCER P002-082797-RMP	040849-00072	45	>5000	N/A	N/A	N/A
ENFORCER INSTANT KNOCKDOWN WASP & HORNET KILLER	040849-00077	0.25	No Data	N/A	N/A	N/A
FOGASOL II	044446-00050	0.4	No Data	N/A	N/A	N/A
QUEST REVENGE INSECT KILLER	044446-00064	0.375	No Data	N/A	N/A	N/A
PPP FLEA & TICK CYCLEBLOCK(R) HOME & CARPET SPRAY	044446-00068	0.4	No Data	N/A	N/A	N/A
PPP FLEA & TICK CYCLEBLOCK TOTAL RELEASE FOGGER	044446-00069	0.4	No Data	N/A	N/A	N/A
QUEST DYNAMO WASP & HORNET KILLER	044446-00071	0.25	No Data	N/A	N/A	N/A
AREO BLAST	044446-00072	0.25	No Data	N/A	N/A	N/A
CAI FLEA & TICK SPRAY FOR DOGS	046515-00031	0.054	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
AND CATS II						
K RID ROACH & FLEA FOGGER	046515-00038	0.435	No Data	N/A	N/A	N/A
K ANT AND ROACH KILLER	046515-00039	0.22	No Data	N/A	N/A	N/A
FLYING INSECT KILLER 3	046515-00047	0.05	No Data	N/A	N/A	N/A
HOME & GARDEN BUG KILLER 4	046515-00048	0.15	No Data	N/A	N/A	N/A
HOUSE & GARDEN BUG KILLER	046515-00049	0.2	No Data	N/A	N/A	N/A
ROACH & FLEA FOGGER	046515-00052	0.2	No Data	N/A	N/A	N/A
CCL CRAWLING INSECT KILLER IX	046813-00039	0.22	No Data	N/A	N/A	N/A
CHEM-TECH DY-SECT SPRAY	047000-00085	0.15	No Data	N/A	N/A	N/A
CT-250	047000-00088	0.125	No Data	N/A	N/A	N/A
CT-100	047000-00090	0.2	No Data	N/A	N/A	N/A
CT TR-1TOTAL RELEASE FOGGER	047000-00091	0.4	No Data	N/A	N/A	N/A
CT TETRAPERM WASP & HORNET KILLER	047000-00092	0.25	No Data	N/A	N/A	N/A
CT SYNERGIZED BACKRUBBER & POUR-ON	047000-00096	0.125	No Data	N/A	N/A	N/A
PERMETHRIN 1% LIQUID WITH SYNERGIST	047000-00151	1	No Data	N/A	N/A	N/A
MARTIN'S PET GUARD FLEA AND TICK SPRAY.	053883-00057	0.054	No Data	N/A	N/A	N/A
MARTIN'S PERMETHRIN 7.4% SYNERGIZED POUR-ON	053883-00074	7.4	No Data	N/A	N/A	N/A
MARTIN'S PERMETHRIN 1.0% SYNERGIZED POUR-ON	053883-00075	1	No Data	N/A	N/A	N/A
CSI 30 - 30	053883-00082	30	No Data	N/A	N/A	N/A
CSI 2-2 ULV	053883-00083	2	No Data	N/A	N/A	N/A
CSI 4-4 ULV	053883-00085	4	No Data	N/A	N/A	N/A
MARTINS 31-67 ULV	053883-00151	31.15	5000	2359-20000	1558	735-6230
CRC BEE BLAST WASP & HORNET KILLER WITH RESIDUAL	055809-00004	0.25	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
CAR-MAC INSECTICIDAL DIE-NO-MITE STRIP	058639-00005	10	No Data	N/A	N/A	N/A
BACK TAG EQ WAR PAINT	058864-00002	7	No Data	N/A	N/A	N/A
WASP & HORNET KILLER	059144-00029	0.25	No Data	N/A	N/A	N/A
PERMECTRIN CDS POUR-ON INSECTICIDE	061483-00070	7.4	>5050	N/A	N/A	N/A
PERMECTRIN WS	061483-00072	8.5	2936	1665-5180	250	142-440
PERMECTRIN WS 34%	061483-00073	34	1171	772-1776	398	262-604
PTENOCIDE PET SPRAY	061483-00081	0.15	>5010	N/A	N/A	N/A
PENTOCIDE AEROSOL HOUSE & CARPET SPRAY	061483-00082	0.2	No Data	N/A	N/A	N/A
PTENOCIDE TOTAL RELEASE FOGGER	061483-00084	0.435	No Data	N/A	N/A	N/A
SYNERGIZED 1% PERMETHRIN POUR-ON	061483-00087	1	No Data	N/A	N/A	N/A
SYNERGIZED 0.5 PERMETHRIN / 1% PBO POUR-ON INSECTICIDE	061483-00090	0.5	No Data	N/A	N/A	N/A
2824-2	061483-00091	5	No Data	N/A	N/A	N/A
ANTGUARD FOR HUMMING BIRD FEEDERS	062451-00003	10.3	>5050	N/A	N/A	N/A
ANTGUARD COASTERS AND COVERS	062451-00004	10.3	No Data	N/A	N/A	N/A
ANTGUARD FOR OUTDOOR USE	062451-00005	10.3	No Data	N/A	N/A	N/A
ANTGUARD GASKETS	062451-00007	10.3	No Data	N/A	N/A	N/A
MCSI Methoprene Based Residual Flea Killer Aerosol	063823-00041	0.2	>5000	N/A	N/A	N/A
MCSI Methoprene-Based Residual Flea Killer Spray	063823-00047	0.2	No Data	N/A	N/A	N/A
MCSI HYDROPRENE BASED COCKROACH KILLER FOGGER (AEROSOL)	063823-00049	0.4	>5000	N/A	N/A	N/A
COMBAT TOTAL RELEASE FOGGER III	064240-00007	0.435	No Data	N/A	N/A	N/A
COMBAT ANT AND ROACH KILLER V	064240-00011	0.204	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
COMBAT ANT AND ROACH KILLER 8	064240-00026	0.22	No Data	N/A	N/A	N/A
ECTO POUR-ON FOR CATTLE AND OTHER LIVESTOCK	067505-00002	7.4	No Data	N/A	N/A	N/A
ECTO FLEA & TICK INSECTICIDE WITH IGR	067505-00003	45	No Data	N/A	N/A	N/A
FLEA AND TICK SPRAY	067517-00051	0.05	1660	N/A	N/A	N/A
ECTO B715 INSECTICIDE	067517-00086	8.5	No Data	N/A	N/A	N/A
ECTO B736 INSECTICIDE	067517-00087	34	No Data	N/A	N/A	N/A
R & M SYNERGIZED PERMETHRIN POWDER #1	067572-00051	0.25	No Data	N/A	N/A	N/A
TSD HOUSE & GARDEN/FLEA AND TICK SPRAY	067603-00002	0.2	No Data	N/A	N/A	N/A
TSD INDOOR OUTDOOR INSECT SPRAY	067603-00003	0.15	No Data	N/A	N/A	N/A
WASP & HORNET KILLER	067603-00011	0.25	No Data	N/A	N/A	N/A
BENGAL ROACH & FLEA FOGGER	068543-00009	3	>5000	N/A	N/A	N/A
BENGAL DRY ROACH SPRAY	068543-00020	2	No Data	N/A	N/A	N/A
BENGAL YARD & PATIO SPRAY	068543-00025	2	No Data	N/A	N/A	N/A
FLEA KILLER IGR AND ADULTICIDE	070627-00043	0.4	No Data	N/A	N/A	N/A
LG PERMASTAR PLUS	071532-00009	1	No Data	N/A	N/A	N/A
TETRAPERM (0.15-0.15-0.75) YARD AND PATIO FOGGER	072155-00064	0.15	No Data	N/A	N/A	N/A
PORIDON	072726-00001	1.84	5000	4250-5880	92	78-108
TETRAPERM 10-25-50 O-B CONCENTRATE	073049-00158	25	>2000	N/A	N/A	N/A
TETRAPERM WASP & HORNET KILLER FEQ 23	073049-00159	0.25	No Data	N/A	N/A	N/A
TETRAPERM WASP & HORNET KILLER FEQ 24	073049-00160	0.375	>5000	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER FEQ 23	073049-00161	0.25	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
TETRAPERM CRAWLING INSECT KILLER FEQ 24	073049-00162	0.375	No Data	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER FEQ 25	073049-00163	0.5	No Data	N/A	N/A	N/A
TETRAPERM 8-20-40-WB CONCENTRATE	073049-00166	20	>500 <5000	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER WBA Q3	073049-00167	0.25	No Data	N/A	N/A	N/A
TETRAPERM TOTAL RELEASE INDOOR FOGGER Q3	073049-00168	0.25	No Data	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER WBA Q4	073049-00169	0.375	No Data	N/A	N/A	N/A
TETRAPERM TOTAL RELEASE INDOOR FOGGER Q4	073049-00170	0.375	No Data	N/A	N/A	N/A
TETRAPERM TOTAL RELEASE INDOOR FOGGER Q5	073049-00171	0.5	>5000	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER WBA Q5	073049-00172	0.5	>5000	N/A	N/A	N/A
PYRAPERM 709 FOGGER	073049-00173	0.4	No Data	N/A	N/A	N/A
KILLER FEQ 24 II	073049-00175	0.375	No Data	N/A	N/A	N/A
FORD'S PERMIDICIDE CRACK & CREVICE SPRAY	073049-00191	0.15	No Data	N/A	N/A	N/A
CSA RESIDUAL F & T SPRAY FOR DOGS AND CATS	073049-00197	0.054	No Data	N/A	N/A	N/A
PYRAPERM FLEA & TICK SPRAY	073049-00307	0.05	No Data	N/A	N/A	N/A
TETRAPERM YARD & PATIO SPRAY	073049-00308	0.05	No Data	N/A	N/A	N/A
PERMANONE DUSTING POWDER	073049-00309	0.5	No Data	N/A	N/A	N/A
PERMANONE (20-5) DUST CONCENTRATE	073049-00310	5	3975	3274-4823	199	164-241
PYRAPERM DUSTING POWDER	073049-00311	0.5	No Data	N/A	N/A	N/A
PYRAPERM DUST CONCENTRATE.	073049-00312	5	>5050	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
TETRAPERM CRAWLING INSECT KILLER	073049-00313	0.5	No Data	N/A	N/A	N/A
TETRAPERM DUAL ACTION ANT AND ROACH KILLER	073049-00314	0.25	>5400	N/A	N/A	N/A
TETRAPERM (16-40) O-B CONCENTRATE	073049-00315	40	>5000	N/A	N/A	N/A
PYRAPERM (7.5-15-37.5) O-B CONCENTRATE	073049-00316	15	>500 <5000	N/A	N/A	N/A
PYRAPERM INSECT KILLER WBA N64	073049-00320	0.05	No Data	N/A	N/A	N/A
PYRAPERM INSECT KILLER WBA N65	073049-00321	0.075	No Data	N/A	N/A	N/A
PYRAPERM INSECT KILLER WBA N66	073049-00322	0.1	No Data	N/A	N/A	N/A
PYRAPERM INSECT KILLER WBA N67	073049-00323	0.125	No Data	N/A	N/A	N/A
PYRAPERM INSECT KILLER WBA N67A	073049-00324	0.125	No Data	N/A	N/A	N/A
PYRAPERM (6-3-30) W-B CONCENTRATE.	073049-00325	3	>500	N/A	N/A	N/A
PYRAPERM AQUEOUS CRAWLING INSECT KILLER	073049-00327	0.3	>5000	N/A	N/A	N/A
TETRAPERM CRAWLING INSECT KILLER II	073049-00328	0.5	No Data	N/A	N/A	N/A
TETRAPERM INDOOR INSECT KILLER N104 WBA	073049-00329	0.2	>5000	N/A	N/A	N/A
TETRAPERM (10-10-50) WATER-BASED CONCENTRATE	073049-00330	10	>500	N/A	N/A	N/A
TETRAPERM (.15-.15-.75) YARD & PATIO WBA	073049-00331	0.15	No Data	N/A	N/A	N/A
TETRAPERM INSECT KILLER N104 WBA	073049-00332	0.2	>5000	N/A	N/A	N/A
PYRAPERM HOUSEHOLD DUSTING POWDER	073049-00335	0.5	No Data	N/A	N/A	N/A
PERMANONE HOUSEHOLD DUSTING POWDER	073049-00336	0.5	>5050	N/A	N/A	N/A
TETRAPERM TOTAL RELEASE INDOOR	073049-00337	0.2	No Data	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
FOGGER N104						
TETRAPERM .2+.2 CIK INDUSTRIAL INSECTICIDE	073049-00338	0.2	No Data	N/A	N/A	N/A
TETRAPERM .2+.2 CIK HOUSEHOLD INSECT KILLER	073049-00339	0.2	No Data	N/A	N/A	N/A
PYRAPERM 7-14-35WB CONCENTRATE	073049-00342	14	834	475-1460	117	67-204
PYRAPERM HOUSEHOLD INSECT KILLER WBA P60	073049-00343	0.3	>5000*	N/A	N/A	N/A
PYRAPERM INDUSTRIAL INSECT KILLER WBA P60	073049-00344	0.3	>5000*	N/A	N/A	N/A
PYRAPERM TOTAL RELEASE INDOOR FOGGER WBA P60	073049-00345	0.3	>5000*	N/A	N/A	N/A
PYRAPERM HOUSEHOLD INSECT KILLER WBA P61	073049-00346	0.4	>5000	N/A	N/A	N/A
PYRAPERM INDUSTRIAL INSECT KILLER WBA P61	073049-00347	0.4	>5000	N/A	N/A	N/A
PYRAPERM TOTAL RELEASE FOGGER WBA P61	073049-00348	0.4	>5000	N/A	N/A	N/A
PYRAPERM HOUSEHOLD INSECT KILLER WBA P59	073049-00349	0.2	No Data	N/A	N/A	N/A
PYRAPERM INDUSTRIAL INSECT KILLER WBA P59	073049-00350	0.2	No Data	N/A	N/A	N/A
PYRAPERM TOTAL RELEASE INDOOR FOGGER WBA P59	073049-00351	0.2	No Data	N/A	N/A	N/A
TETRAPERM TRA	073049-00415	0.375	No Data	N/A	N/A	N/A
TETRAPERM AS TRA	073049-00416	0.375	No Data	N/A	N/A	N/A
TETRAPERM MULTI-PURPOSE INSECT KILLER	073049-00432	0.25	>5000*	N/A	N/A	N/A
TETRAPERM 10-10 CONCENTRATE	073049-00434	10	>500 <5000*	N/A	N/A	N/A
TETRAPERM 11 WB WASP, HORNET & YELLOW JACKET KILLER	073049-00436	0.1	>5000*	N/A	N/A	N/A
TETRAPERM 22 WB WASP, HORNET &	073049-00437	0.2	>5000*	N/A	N/A	N/A

PRODUCT/TRADE NAME	EPA Reg.No.	% Permethrin	PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT	
			LD 50 (mg/kg)	CI (mg/kg)	LD50 (mg/kg)	CI (mg/kg)
YELLOW JACKET KILLER						
MARKETQUEST ONE DROP FLEA & TICK CONTROL WITH IGR	073510-00005	45	>5000	N/A	N/A	N/A
MARKETQUEST ONE DROP FLEA & TICK CONTROL WITH IGR-2	073510-00009	45	No Data	N/A	N/A	N/A
AQUA-KONTROL CONCENTRATE	073748-00001	20	1000*	850-1200	200	170-240
KONTROL 2-2	073748-00003	2	No Data	N/A	N/A	N/A
KONTROL 4-4	073748-00004	4.6	No Data	N/A	N/A	N/A
KONTROL 30-30 CONCENTRATE	073748-00005	30	891*	501-1584	267	150-475
MASTERLINE KONTROL 31-67 CONCENTRATE FOR MOSQUITOES, FLIES, & GNATS	073748-00006	31.15	>5000	N/A	N/A	N/A
PROTIM OPTIMUM	074405-00001	0.35	No Data	N/A	N/A	N/A
BUG STOMPER II	074621-00004	3	No Data	N/A	N/A	N/A
VACSOL (R) AZURE	075101-00001	0.43	No Data	N/A	N/A	N/A
TANALITH (R) T PLUS	075101-00003	0.42	No Data	N/A	N/A	N/A
LASTCALL EUCOSMAK	082803-00001	6	No Data	N/A	N/A	N/A
SVP4	083399-00001	45	No Data	N/A	N/A	N/A
SVP3	083399-00002	45	No Data	N/A	N/A	N/A
SVP2	083399-00003	45	No Data	N/A	N/A	N/A
SVP1	083399-00005	45	>1750 <5000	N/A	N/A	N/A