

## Acute Oral Toxicity and Repellency of 933 Chemicals to House and Deer Mice

E. W. Schafer, Jr. and W. A. Bowles, Jr.

U.S. Department of Interior - Fish and Wildlife Service, Denver Wildlife Research Center, Building 16 - Denver Federal Center, Denver, Colorado 80225

**Abstract.** Five individual bioassay repellency or toxicity variables were estimated or determined for deer mice (*Peromyscus maniculatus*) and house mice (*Mus musculus*) under laboratory conditions. ALD's (Approximate Lethal Doses) or LD<sub>50</sub>'s of 230 chemicals to deer mice are presented, as are food reduction (FR) values (3-day feeding test as a 2.0% treatment rate) for white wheat seeds (*Triticum aestivum*) for 696 chemicals and Douglas fir seeds (*Pseudotsuga menziesii*) for 81 chemicals. A similar repellency evaluation (REP) using a 5-day test with white wheat seeds at a 2.0% treatment rate was conducted with house mice and the results for 347 chemicals are presented. These toxicity and repellency data should be useful to those desiring to predict the potential for acute toxicity in wild mammals following exposure to a wide variety of chemicals.

A calculation of the daily chemical dose ingested in mg/kg/day during the wheat test on deer mice and its resultant effects on mortality are also presented for most of the 696 chemicals. This calculated value, when used along with the ALD or LD<sub>50</sub>, should permit a rough estimate of the potential sub-acute toxicity of any tested chemical on wild mammals for which both types of data are available.

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A series of publications summarizing the results of approximately 25 years of chemical research conducted by the Denver Wildlife Research Center (DWRC), on wild or domestic birds and mammals has been initiated. The first publication presented wild avian toxicity or repellency results for 998 chemicals (Schafer *et al.* 1983). This paper will present similar data for 933 chemicals tested on wild

deer mice and white (house) mice. Our purpose is to make available these generally unpublished test results so that they can be referenced or used by the various public, private, and governmental groups that may require this information.

### Methods

The chemicals included in the tests were technical or analytical grade pesticides and other commercially available or experimental chemicals. They were purchased from various commercial sources or contributed by cooperating chemical companies. For presentation purposes, they have been arranged by Chemical Abstracts Registry Number (CASRN), and are identified by an accepted trade, coined, product or other chemical name that is generally *not* included in the 8th or 9th Collective Index of the Chemical Abstracts Service.<sup>1</sup> Wild-trapped house and deer mice or domestically bred house mice were used in all test procedures which are described in detail by Kverno (1954) and Kverno *et al.* (1965). Five bioassay tests were conducted, resulting in six basic data sets as follows:

### Repellency

Three repellency tests were conducted, two on deer mice and one on house mice. The initial test used five individually caged deer mice. Each was offered 25 white wheat seeds treated with 2.0% (wt/wt) of the candidate chemical daily for 3 days, followed by 4 days of observation for gross sub-acute effects. An alternate less preferred food (laboratory rodent pellets) and water were

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<sup>1</sup> Because of the length and complexity of Chemical Abstracts nomenclature, the names used to identify chemicals in Table 1 were extracted from several sources. Primary consideration was given to the common name, but shortened chemical names, code numbers, or registered trademarks were also used but may not be specifically identified.

**Table 1.** Acute oral toxicity and repellency of 933 chemicals to deer and house mice

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Alloxan	50715	+ 1250	—	0.00	—	—
Tremorine	51730	+ 70.0	—	94.4	—	—
Urethane	51796	+ 1150	—	8.00	—	—
Bay 37341	52608	+ 991	—	20.7	—	—
<i>DL</i> -Penicillamine	52664	+ 1230	—	1.60	—	—
Pilocarpine hydrochloride	54717	—	+ 80.0	—	—	—
3,4-Diaminopyridine	54966	+ 1125	—	10.0	—	—
Bayer 37342	55378	+ 347	1070	72.3–83.0	1.00	—
Fenthion	55389	+ 62.5	94.0	95.0–97.0	—	80.0
Tetraethylammonium chloride	56348	+ 1250	—	0.00	—	—
Tributyltin oxide	56359	+ 200	—	84.0	—	100
Tributyltin acetate	56360	+ 37.5	320	97.0	—	100
Diethylstilbestrol	56531	+ 146	1070	79.5–98.8	—	—
Coumaphos	56572	—	—	—	—	75.0
Bis(phenoxyarsinyl) oxide	58366	+ 50.0	42.0	96.0–98.0	—	—
2-Hydroxyquinoline	59314	—	—	—	—	0.00
2-Benzoxazolol	59494	—	—	—	—	0.00
Strychnine sulfate	60413	—	8.00	—	—	—
Dimethoate	60515	+ 375	320	70.0	—	—
1-Ethylloxindole	61289	—	—	—	—	0.00
4-Nitrobenzoic acid	62237	—	—	—	—	0.00
Sodium fluoroacetate	62748	- 263	3.70–5.50	79.0	71.0	—
Carbaryl	63252	+ 600	470	52.0	—	—
Phenylacetylurea	63989	+ 1250	—	0.00	—	—
3-Methylphenylurea	63990	+ 1225	—	2.00	—	—
1-Phenylurea	64108	+ 1238	—	1.00	—	—
Physostigmine sulfate	64471	—	10.0	—	—	—
Tetracycline hydrochloride	64755	+ 925	+ 1600	38.0	—	—
4-Aminosalicylic acid	65496	+ 1113	—	11.0	—	—
Benzoic acid	65850	+ 1250	—	0.00	—	—
Phenazine hydrochloride	66057	+ 336	—	73.1	—	—
Cyclohexamide	66819	+ 125	—	90.0	—	—
3,5-Dimethylpyrazole	67516	—	—	—	—	20.0
4-Methylbenzenesulfonamide	70553	—	—	—	—	70.0
Dichlorvos-ethyl	72004	+ 363	42.0	71.0	—	—
Endrin	72208	- 100	18.0	92.0	80.0	—
Mestranol	72333	+ 950	—	24.0	—	—
<i>N,N'</i> -Diphenyl-1,4-phenylenediamine	74317	—	—	—	—	10.0
<i>p</i> -Nitrophenylazoresorcinol	74395	—	—	—	—	0.00
Ethyl mercaptan	75081	+ 1238	—	1.00	—	—
Isopropyl mercaptan	75332	+ 1238	—	1.00	—	—
<i>tert</i> -Butyl mercaptan	75661	+ 1250	—	0.00	—	—
Alloxantin	76244	+ 1013	—	19.0	—	—
Allyltriphenyltin	76631	- 68.8	—	89.0(1.00%)	0.00	—
Triphenyltin hydroxide	76879	+ 75.0	140–210	94.0–96.0	26.0	100
Dibutyltin dilaurate	77587	+ 427	710	65.9	6.40	100
Dimethylhydantoin	77714	+ 1250	—	0.00	—	—
Bis(triphenyltin) sulfide	77805	+ 663	710	47.0–74.0	—	90.0
Dibutyltin maleate	78046	+ 250	470	80.0	0.00	100
Menazon	78579	+ 613	—	51.1	—	—
Thiosemicarbazide	79196	+ 317	94.0	74.7–88.0	—	—
2-Methacrylic acid	79414	- 1238	—	1.00	—	—
Dapsone	80080	—	—	—	—	100
Tetramethylenedisulfotetramine	80126	- 113	1.60	91.0	57.0	—
<i>N</i> -Butyl-5-sulfonamido- <i>o</i> -anisidine	80228	+ 1238	—	1.00	—	—
Tiglic acid	80591	+ 1150	—	8.00	—	—
Musk xylol	81152	+ 1213	—	3.00	—	—
Warfarin	81812	+ 1233	—	1.33	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
1,8-Dichloroanthraquinone	82439	+1125	+1600	10.0	15.0	—
1-Aminoanthraquinone	82451	+1225	—	2.00	—	40.0
Diphenylcarbonyl chloride	83012	—	—	—	—	0.00
4-Aminopyridine	83078	+500	—	56.0	—	—
Skatole	83341	+443	470–1600	64.5–98.4	0.130	—
Ethyl phthalate	84662	—	—	—	—	30.0
5,6-Benzoquinoline	85029	+1238	—	1.00	—	20.0–50.0
2,2'-Terephthaloyl benzoic acid	85596	—	—	—	—	100
N,N'-Diethylcarbanilide	85983	+1125	—	10.0	—	40.0
1-Cyanonaphthalene	86533	+850	—	32.0	—	10.0
Pyrolan	87478	+313	—	75.0	—	—
3-Indoleacetic acid	87514	+1243	+1600	0.530–10.0	—	—
1,2,3-Trihydroxybenzene	87661	–1240	—	0.800–2.40	—	—
Chloranilic acid	87887	+1125	—	10.0	—	—
4-Chloro-3,5-xyleneol	88040	+525	1600	58.0	—	—
1-Vinyl-2-pyrrolidone	88120	+1090	—	12.8	—	—
2-Furoic acid	88142	+1225	—	2.00	—	—
Versalide	88299	+1038	470	17.0–50.0	—	—
Quinolinic acid	89009	+1163	—	7.00	—	—
2,4-Dinitrobenzenesulfonic acid	89021	+1138	—	9.00	—	—
Norphenazone	89258	+1250	—	0.00	—	30.0
3,5-Dihydroxy-2-naphthoic acid	89350	+1150	—	8.00	—	—
1,5-Dimethoxy-2-nitrobenzene	89394	+1250	—	0.00	—	—
4-Methyl-6-nitroaniline	89623	—	—	—	—	0.00
2,4,5-Trichloronitrobenzene	89690	+550	1070	56.0	0.00	—
Salicyl alcohol	90017	+1250	—	0.00	—	—
2-Benzoylpyridine	91021	+825	—	34.0	—	—
Quinaldine	91634	+1176	+470	5.87	—	—
Diphenyl	92524	+450	—	64.0	—	—
4-Phenylmorpholine	92535	+1225	—	2.00	—	50.0
Ethylbenzylamine	92591	—	—	—	—	20.0
3-Hydroxy-2-naphthoic acid	92706	—	—	—	—	100
Phenothiazine	92842	—	—	—	—	0.00
2-Methoxynaphthalene	93049	+825	—	34.0	—	30.0
Quinaldic acid	93107	+925	—	26.0	—	—
2-Ethoxynaphthalene	93185	+1213	—	3.00	—	30.0
1,4-Bis(2-naphthylamino)benzene	93469	—	—	—	—	0.00
Thioquinox	93754	+463	1070	63.0	21.0	—
Ethyl aminobenzoate	94097	—	—	—	—	0.00
Benzylparaben	94188	—	—	—	—	10.0
5-Nitrobenzimidazole	94520	+1188	—	5.00	—	30.0
Vanitrope	94860	—	—	—	—	30.0
2-Methoxy-5-chloroaniline	95034	+975	—	22.0	—	—
3,4-Dimethylaniline	95647	+900	—	28.0	—	100
4-Chloro-2-methylaniline	95692	+375	—	70.0	—	—
2-Methylhydroquinone	95716	—	—	—	—	10.0
3,4-Dichloroaniline	95761	+75.0	—	94.0	—	90.0
5-Chloro-2-methylaniline	95794	+863	—	31.0	—	—
4-Chlororesorcin	95885	—	—	—	—	40.0
1,2-Dibromo-3-chloropropane	96128	+1240	—	0.800	—	—
<i>alpha</i> -Chlorohydrin	96242	+625	—	50.0	—	—
1,3-Dimethylurea	96311	+1250	—	0.00	—	—
1,3-Ethylenethiourea	96457	+1250	—	0.00	—	—
Butyrolactone	96480	+1245	—	0.330	—	—
2-Aminothiazole	96504	+350	—	72.0	—	—
Mercaptothiazoline	96537	+20.0	710	98.4	49.0	—
2-Nitro-4-methoxyaniline	96968	+1175	—	6.00	—	0.00
3-Nitro-4-chlorobenzoic acid	96991	+1250	—	0.00	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
Yellow sulfon chloride	97085	+338	—	73.0	—	—
Genite	97165	+1155	—	7.60	—	—
5-Chloro-2,4-dimethoxyaniline	97507	+900	—	28.0	—	—
2-Amino-5-azotoluene	97563	+1250	—	0.00	—	50.0
Allantoin	97596	+1038	—	17.0	—	—
Benzenesulfonyl chloride	98099	+775	—	38.0	—	—
4-Bromobenzenesulfonyl chloride	98588	+888	—	29.0	—	—
4-Chlorobenzenesulfonyl chloride	98602	+1113	—	11.0	—	—
3-Nitroaniline	99092	+375	—	70.0	—	100
Citrazinic acid	99116	+1200	—	4.00	—	40.0
5-Nitro-2-methylaniline	99558	+788	—	37.0	—	—
5-Nitro-2-methoxyaniline	99592	+1050	—	16.0	—	—
1,3-Dinitrobenzene	99650	—	—	—	—	100
Methylparaben	99763	+1250	—	0.00	—	30.0
Ethyl 4-nitrobenzoate	99774	+1250	—	0.00	—	70.0
Moslene	99854	+1238	—	1.00	—	—
4'-Aminoacetophenone	99923	-825	1600	34.0	—	—
4-Nitroaniline	100016	+1250	—	0.00	—	70.0
Isocinchomeric acid	100265	+1250	—	0.00	—	—
4-Cyanopyridine	100481	+1238	—	1.00	—	—
Benzaldehyde	100527	+1250	+470	0.00	—	—
3-Cyanopyridine	100549	+1225	—	2.00	—	—
3-Pyridylcarbinol	100550	+1250	—	0.00	—	—
2-Cyanopyridine	100709	+1188	—	5.00	—	—
2-Ethylpyridine	100710	+1175	—	6.00	—	—
Hexamethylenetetramine	100970	+1250	—	0.00	—	40.0
Dyrene	101053	+1175	—	6.00	—	—
4-Amino-4'-nitrodiphenyl sulfide	101597	—	—	—	—	100
4-Isopropylaminophenylamine	101724	—	—	—	—	70.0
4-Benzeneazodiphenylamine	101757	+838	—	33.0	—	40.0
4,4'-Diaminophenylmethane	101779	-1100	—	12.0	—	40.0
4,4'-Diaminophenyl ether	101804	-1025	—	18.0	—	70.0
2-Benzylpyridine	101826	+1000	—	20.0	—	—
<i>N,N'</i> -Di- <i>sec</i> -butyl- <i>p</i> -phenylenediamine	101962	—	—	—	—	90.0
Phenylurethane	101995	+1138	—	9.00	—	—
2,5-Dimethoxyaniline	102567	+638	—	49.0	—	—
<i>beta</i> -Nitrostyrene	102965	+12.5	710	99.0	2.00	—
Hydroquinone monobenzyl ether	103162	—	—	—	—	0.00-20.0
Azobenzene	103333	+500	—	60.0	—	—
Benzyl succinate	103435	—	—	—	—	20.0
Diethyl-3-oxoglutarate	105500	—	—	—	—	40.0
1,3-Diethylthiourea	105555	-213	62.0-94.0	83.0	—	—
Propyl butyrate	105668	—	—	—	—	40.0
<i>p</i> -Cresol	106445	+1238	—	1.00	—	—
4-Chloroaniline	106478	—	—	—	—	10.0
4-Methylaniline	106490	+1025	—	18.0	—	—
Quinone	106514	+1025	—	18.0	—	—
1-Methyl-4-piperidinol	106525	+1238	—	1.00	—	—
4-Chlorobenzenethiol	106547	+1025	—	18.0	—	—
Acrolein	107028	+1250	—	0.00	—	—
1-Propyl mercaptan	107039	+1250	—	0.00	—	—
Tetraethylpyrophosphate	107493	-113	1.60-3.70	91.0	57.0	—
3-Mercaptopropionic acid	107960	+950	—	24.0	—	—
Pyrazoxon	108349	-12.5	—	99.0	—	—
3-Methylthiophenol	108407	+1225	—	2.00	—	—
2,4-Dimethylpyridine	108474	+1238	—	1.00	—	—
2,6-Dimethylpyridine	108485	+1250	—	0.00	—	—
Thiophenol	108985	+1238	—	1.00	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
3-Hydroxypyridine	109002	+1225	—	2.00	—	—
2-Bromopyridine	109046	+1250	—	0.00	—	—
2-Methylpiperidine	109057	+1250	—	0.00	—	—
2-Chloropyridine	109091	+1240	—	0.00	—	—
Dibutyl sebacate	109433	—	—	—	—	10.0
1,3-Dibutylthiourea	109466	+825	—	34.0	—	—
5-Allylthiourea	109579	+100	+1600	92.0	—	—
1-Butylmercaptan	109795	+1163	—	7.00	—	—
1,3-Propane dimercaptan	109808	+150	1070	88.0	—	—
Methyleneaminoacetonitrile	109820	+1125	—	10.0	—	60.0
Acetone semicarbazone	110203	+1238	—	1.00	—	—
Ethyl caprate	110383	+1150	—	8.00	—	30.0
2-Heptanone	110430	+1088	—	13.0	—	—
Putrescine	110601	-1225	1600	2.00	—	—
<i>n</i> -Amyl mercaptan	110667	+1250	—	0.00	—	—
Pyridine	110861	+1250	—	0.00	—	—
3,4-Dihydropyran	110872	+1250	+470	0.00	—	—
1-Octylamine	111864	—	—	—	—	10.0
<i>n</i> -Octyl mercaptan	111886	+1238	—	1.00	—	—
Methyl nonyl ketone	112129	+950	—	24.0	—	—
Decaldehyde	112312	+1050	—	16.0	—	—
Lauryl chloride	112527	+1238	—	1.00	—	70.0
Lauryl mercaptan	112550	+138	—	9.00	—	—
1-Octadecene	112889	+1206	+470	3.47	—	—
Chloropheniramine maleate	113928	—	1600	—	—	100
Aprocarb	114261	+760	710-750	29.8-47.9	—	—
Aminoglycol	115695	+100	140	92.0	—	—
Chlorophonium chloride	115786	+150	470	88.0	—	100
Fensulfotion	115902	-50.0	—	96.0	—	—
Bayer 25918	115913	-50.0	—	96.0	—	—
Aldicarb	116063	-55.2	1.60	52.0-95.2	56.0	—
Succinylsulfathiazole	116438	+625	—	50.0	—	—
Fumarin	117522	+1250	—	0.00	—	—
Anthraquinone-2-carboxylic acid	117782	+625	—	50.0	—	—
Hexachlorobenzene	118741	+1250	710	0.00	—	—
Chloranil	118752	+988	—	21.0	—	—
2-Aminobenzoic acid	118923	+1237	—	1.07	—	—
2'-Hydroxyacetophenone	118934	+1227	+470	1.87	—	—
3-Nitro-4-methylaniline	119324	—	—	—	—	100
Isolan	119380	+188	—	85.0	—	—
Benzoin	119539	+1025	—	18.0	—	—
2-Nitrodiphenylamine	119755	—	—	—	—	0.00
2'-Nitro- <i>p</i> -acetanisidide	119813	—	—	—	—	10.0
3-Amino-4-methoxybenzanilide	120354	+1188	—	5.00	—	—
Indole	120729	+1007	1070	19.5-46.0	0.00	—
<i>N,N</i> -Didodecylthiooxamide	120887	—	—	—	—	20.0
Ethylene urea	120934	+1175	—	6.00	—	—
<i>N</i> -Acetylsulfanilyl chloride	121608	+1225	—	2.00	—	0.00
2-Amino-5-nitrothiazole	121664	—	—	—	—	80.0
3-Acetylphenol	121711	+1237	+470-+1600	1.07	—	—
Malathion	121755	+490	+400	60.8	—	—
Fenitrothion	122145	+125	140	90.0-95.0	51.0	—
Dimetan	122156	+463	1070	63.0	1.00	—
1,2-Diphenylhydrazine	122667	+1213	—	3.00	—	30.0
4-Chlorophenoxy acetic acid	122883	—	—	—	—	0.00
Musk ambrette	123693	+913	1600	27.0	—	—
Tetrahydropyrrole	123751	+914	—	26.9	—	—
Octanonitrile	124129	—	—	—	—	0.00

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Hydroxyurea	127071	+1250	—	0.00	—	—
Endothal	129679	+1094	—	12.8	—	—
1,4-Naphthoquinone	130154	-225	470	82.0	—	—
Quinine hydrochloride	130892	+1175	1600	6.00	—	—
2-Chloroanthraquinone	131099	—	—	—	—	10.0
4-Benzeneazo-1-naphthylamine	131226	+1075	—	14.0	—	40.0
1-Naphthylacetoneitrile	132752	+1175	—	6.00	—	40.0
Captan	133062	—	—	—	—	60.0
Folpet	133073	—	—	—	—	20.0
2-Methoxy-4-nitro-5-methylaniline	134190	+1175	—	6.00	—	—
Methyl anthranilate	134203	+1250	—	0.00	—	—
Phenyl-2-naphthylamine	135886	—	—	—	—	0.00-20.0
4-Hexylresorcinol	136776	—	—	—	—	50.0
2-Aminobenzothiazole	136958	—	—	—	—	0.00
2-Methylthiophenol	137064	+1250	—	0.00	—	—
2-Aminobenzenethiol	137075	+1025	—	18.0	—	—
2,4-Diaminophenol dihydrochloride	137097	+1238	—	1.00	—	30.0
Thiram	137268	+200	1600	84.0	10.0	—
Ziram	137304	-768	—	39.0	—	—
Bis(4-aminophenyl) sulfide	139651	—	—	—	—	100
Maralluride	140205	+1250	—	0.00	—	70.0
4-Chlorobenzyl cyanide	140534	+1138	—	9.00	—	—
Dexon	140567	-375	140-470	4.00-70.0	—	—
Dicrotophos	141662	-25.0	—	98.0	—	—
2,6-Diaminopyridine	141866	+800	—	36.0	—	—
2-Hydroxypyridine	142085	+1238	—	1.00	—	—
Nabam	142596	+562	1600	55.0	—	—
Lauric acid	143077	+1238	—	1.00	—	—
Decylammonium chloride	143099	+250	—	80.0	—	80.0
Decyl mercaptan	143102	+1113	—	11.0	—	—
Chlordecone	143500	-100	—	92.0	—	—
Musk tibetene	145391	+1250	—	0.00	—	—
<i>p</i> -Naphtholbenzein	145506	—	—	—	—	0.00
Tributyltin chloride	146229	+588	710	53.0-95.0	36.0	100
2-Mercaptobenzoic acid	147933	+1250	—	0.00	—	—
8-Hydroxyquinoline	148243	+938	—	25.0	—	70.0
2-Mercaptobenzothiazole	149304	—	—	—	—	20.0
<i>N,N'</i> -Diphenylethylenediamine	150618	—	—	—	—	20.0
Octamethylpyrophosphoramidate	152169	-175	8.00-12.0	86.0	21.0	—
Trimethoxyphosphine sulfide	152181	+1231	—	1.50	—	—
Zinc mercaptobenzothiazole	155044	—	—	—	—	20.0
Methscopolamine bromide	155419	+300	1070	76.0	—	—
2-Aminoethanethiol hydrochloride	156570	+1238	—	1.00	—	—
Isobenzan	297789	-87.5	12.0	25.0-93.0	—	—
Phosphamidon	297994	-50.0	18.0	96.0	74.0	—
Thiodemeton	298044	+125	18.0	90.0	49.0	—
Zytron	299854	+75.0	—	94.0	—	—
Acreoline hydrobromide	300083	—	+80.0	—	—	—
Lead acetate	301042	—	—	—	—	20.0
Chloral hydrate	302170	+1163	—	7.00	—	—
2,6-Dinitrothymol	303219	+538	140	57.0	—	—
2-Chlorovinyl diethyl phosphate	311477	-113	—	91.0	—	—
Mexacarbate	315184	+138	—	78.0(1.00%)	—	—
5-Chlorosalicylic acid	321142	+1038	—	17.0-19.0	—	—
Trichloronate	327980	+1250	—	0.00	—	—
N-2404	328041	+100	62.0	92.0	—	—
6-Aminonicotinamide	329895	-240	+94.0--320	70.9-80.8	63.0-75.8	—
3,5-Diisopropyl phenyl carbamate	330643	—	—	—	—	100

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Phosfolan	333299	+ 25.0	62.0	98.0	15.0	—
Bayer 38156	333437	- 125	—	90.0	—	—
3-Chloro-4-fluoroaniline	367215	+ 1038	—	17.0	—	70.0–80.0
Triphenyltin fluoride	379522	+ 163	710	87.0	—	100
Diazepam	439145	+ 388	1070	69.0	—	—
2,3-Diaminopyridine	452584	+ 850	—	32.0	—	—
3-Fluoro-4-methylaniline	452777	+ 1175	—	6.00	—	—
3-Aminopyridine	462088	+ 1250	—	0.00	—	—
Cadaverine	462942	+ 1088	1600	13.0	—	—
Chlorfenvinphos	470906	+ 806	—	35.5	—	—
5-Nitrobarbituric acid	480682	—	—	—	—	20.0
Auramine	492808	+ 1050	—	16.0	—	30.0
Azoxybenzene	495487	+ 700	—	44.0	—	60.0
Acetylenediurea	496468	+ 1100	—	12.0	—	—
3,4-Dimercaptotoluene	496742	+ 725	—	42.0	—	—
Dinicotinic acid	499810	+ 1238	—	1.00	—	—
3-Pyridinecarboxaldehyde	500221	+ 1238	—	1.00	—	—
3-Phenylpropionic acid	501520	+ 913	+ 1600	27.0	15.0	—
3-Pyridylacetic acid	501815	+ 1225	—	2.00	—	—
Butyl ketone	502567	+ 613	—	51.0–57.0	—	—
4-Aminopyridine	504245	+ 163	42.0	87.0	—	—
2-Aminopyridine	504290	+ 1250	—	0.00	—	—
Diheptadecyl ketone	504530	—	—	—	—	10.0
3-Nitropropanoic acid	504881	+ 613	+ 1600	51.0	27.0	—
Isobutyl mercaptan	513440	+ 1238	—	1.00	—	—
sec-Butyl mercaptan	513531	+ 1175	—	6.00	—	—
Diphenylacetamide	519879	—	—	—	—	10.0
Bromoxyquinoline	521744	+ 1238	—	1.00	—	30.0
1,2-Naphthoquinone	524425	+ 738	1070	41.0	20.0	—
1,3-Dimethylthiourea	534134	+ 675	+ 1600	46.0	—	—
3,5-Diaminobenzoic acid	535875	+ 1250	—	0.00	—	—
p-Dimethylaminobenzalrhodanine	536174	+ 1250	—	0.00	—	70.0
4-Ethylpyridine	536754	+ 1238	—	1.00	—	—
Nitrophenide	537917	—	—	—	—	40.0
Phenylglyceryl ether	538432	—	—	—	—	0.00
Dibenzalacetone	538589	—	—	—	—	0.00
4-Iodoaniline	540374	+ 1250	—	0.00	—	60.0
1,2-Dimercaptoethane	540636	+ 1250	—	0.00	—	—
Isoamyl mercaptan	541311	+ 1213	—	3.00	—	—
p-Cholorobenzylpseudothiuronium chloride	544478	+ 62.5	1600	95.0	—	—
Salicylsalicylic acid	552943	+ 1250	—	0.00	—	—
Guaiacol carbonate	553173	—	—	—	—	20.0
p-Nitrobenzyl cyanide	555215	—	—	—	—	90.0
1-Allylurea	557119	+ 238	1070–+ 1600	81.0	—	—
Dibutyltin difluoride	563257	+ 75.0	470–710	94.0–95.0	36.0	100
Benzophenoneaniline	574458	—	—	—	—	30.0
1-Acetamidonaphthalene	575360	—	—	—	—	10.0
2-Acetamidonaphthalene	581975	—	—	—	—	20.0
3,4-Dimethylpyridine	583584	+ 1250	—	0.00	—	—
Bromohydroquinone	583697	—	—	—	—	0.00
4-Bromo-2-methylaniline	583755	+ 1000	—	20.0	—	70.0
2-Pyridylcarbinol	586981	+ 1250	—	0.00	—	—
p-Benzylideneaminophenol	588534	—	—	—	—	0.00
2-Bromoethyl phenyl ether	589106	+ 338	—	73.0	—	50.0
1-Acetylthiourea	591082	+ 363	94.0	71.0–99.0	0.00	—
3,5-Dimethylpyridine	591220	+ 925	—	29.0	—	—
1-Butylurea	592314	+ 1188	—	5.00	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Butyl carbamate	592358	+1213	—	3.00	—	—
Octadecane	593453	+1229	+470	1.67	—	—
Tetramethyltin	594274	—	—	—	—	70.0
Tetraphenyllead	595891	—	—	—	—	0.00
Tetraphenyltin	595904	+1075	—	14.0	—	—
Dibutyl sulfone	598049	+1013	—	19.0	—	—
1-Methylurea	598505	+1250	—	0.00	—	—
Bis(3-aminophenyl) sulfone	599611	—	—	—	—	60.0
<i>DL</i> -2-Methylbutyric acid	600077	+1238	—	1.00	—	—
<i>Di-beta</i> -naphthol	602095	+188	42.0	85.0	—	—
Triphenylarsine	603327	—	—	—	—	90.0
Triphenylbismuth	603338	—	320	—	—	—
Diphenylurethane	603521	+1138	—	9.00	—	—
<i>N,N</i> -Diphenylformamide	607001	—	—	—	—	0.00
8-Nitroquinoline	607352	—	—	—	—	10.0
4-Methyl-2-quinolone	607669	—	—	—	—	0.00
2,6-Dibromo-4-aminophenol	609212	+988	—	21.0	—	70.0
Dimethyl 4-nitrophthalate	610220	—	—	—	—	10.0
Methyl 2-chlorobenzoate	610968	—	—	—	—	0.00
Benzalacetophenone dibromide	611916	—	—	—	—	10.0
2-Nitrobenzotrile	612248	+888	—	29.0	—	100
6-Chloroquinoline	612577	+1238	—	1.00	—	30.0
2-Naphthoylacetoneitrile	613570	+1238	—	1.00	—	40.0
2-Naphthyl salicylate	613785	+1250	—	0.00	—	40.0
2-Cyanoacetophenone	614164	+1225	—	2.00	—	50.0
Benzoylurea	614222	+763	—	39.0	—	—
2-Methylphenylurea	614777	+1250	—	0.00	—	—
1-Methylhydantoin	616046	+1138	—	9.00	—	—
2-Pyrrolidone	616455	+1250	—	0.00	—	—
Methyl 3-iodobenzoate	618917	+1150	—	8.00	—	50.0
4-Nitrodiphenyl ether	620882	—	—	—	—	0.00
Glycerol 1,3-diphenyl ether	622048	—	—	—	—	0.00
4-Ethoxyphenol	622628	—	—	—	—	20.0
2-Chloroethyl phenyl ether	622866	+1213	—	3.00	—	30.0
4-Bromobenzonitrile	623007	+1213	—	3.00	—	—
4-Chlorobenzonitrile	623030	+1238	—	1.00	—	60.0
Ethyl 2-furanacrylate	623201	—	—	—	—	0.00
1,3-Diethylurea	623767	+1113	—	11.0	—	—
Methyl valerate	624248	—	—	—	—	30.0
2,5-Dibromopyridine	624282	+1238	—	1.00	—	—
1-Ethylurea	625525	+1138	—	9.00	—	—
3,5-Dibromopyridine	625923	+1188	—	5.00	—	—
2,6-Dibromopyridine	626051	+625	320	50.0	—	—
3-Bromopyridine	626551	+1225	—	2.00	—	—
3-Methylpiperidine	626562	+938	—	25.0	—	—
4-Methylpiperidine	626584	+1238	—	1.00	—	—
3-Chloropyridine	626608	+1238	—	1.00	—	—
4-Hydroxypyridine	626642	+1250	—	0.00	—	—
1-Methylpiperidine	626675	+1238	—	1.00	—	—
<i>n</i> -Propylurea	627065	+1138	—	9.00	—	—
Propyl carbamate	627123	+1225	—	2.00	—	—
Pentyl cyanide	628739	—	—	—	—	10.0
Heptanal oxime	629312	+1225	—	2.00	—	50.0
Dodecyl cyanide	629607	—	—	—	—	10.0
Tetramethylurea	632224	+1125	—	10.0	—	—
Acetylsalicylaldehyde diacetate	634208	+1250	—	0.00	—	30.0
4-Chloro-3-nitroaniline	635223	+725	—	42.0	—	100
1,2,3,4-Tetrahydroquinoline	635461	—	—	—	—	10.0



Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Distamycin A	636475	+75.0	—	94.0	—	100
4-Nitrobenzoylhydrazide	636975	+1238	—	1.00	—	—
Tripentylorthoformate	637423	—	—	—	—	10.0
Heptadecyl cyanide	638653	+1088	—	13.0	—	50.0
Dithiometon	640153	+1063	—	15.0	—	—
Dimetilan	644644	+625	—	50.0	—	—
3-Phenylpropionitrile	645590	+925	—	26.0	—	30.0
(Carboxymethoxy)amine	645885	+1038	—	17.0	—	—
Hexamethylditin	661698	-410	—	67.2	—	—
Carbanolate	671045	—	—	—	—	100
U 17556	672060	+37.5	94.0	97.0	—	—
Dibutyltin chloride	683181	+62.5	470	95.0	3.00	90.0-100
2-Methylimidazole	693981	—	—	—	—	40.0
4-Methyl-2-aminopyridine	695341	+1075	—	14.0	—	—
N-(2-Cyanoethyl)cyclohexylamine	702034	+1163	—	7.00	—	—
4-Chloro- <i>beta</i> -nitrostyrene	706070	+217	387*-472*	82.7	31.5	—
3-Acetylbenzenesulfonyl fluoride	709604	+663	1070	47.0	—	—
Bayer 28580	728405	+85.0	—	93.2	—	—
Dimorpholinethiuram disulfide	729464	—	—	—	—	50.0
Eptam	759944	+1188	—	5.00	—	—
3-Chlorobenzonitrile	766847	+1250	—	0.00	—	—
2,2'-Dichlorohydrazobenzene	782741	—	—	—	—	20.0
Carbofenthion	786196	+388	—	69.0	—	—
Flexzone 5L	788170	—	—	—	—	75.0
Quinine sulfate	804637	—	—	—	—	40.0
Hexabutyliditin	813194	—	—	—	—	60.0
1,2-Propanedithiol	814675	+1125	—	10.0	—	—
Diisopropylamine hydrochloride	819794	+1213	—	3.00	—	30.0
Dipropyltin chloride	867367	—	—	—	—	100
Diethylaminoethyl chloride hydrochloride	869249	+100	320	92.0	—	100
Diacetoxypiprene	869294	+1250	—	0.00	—	100
Diocetyl tin oxide	870086	—	—	—	—	50.0
Allyl mercaptan	870235	+1088	—	13.0	—	—
4-Pyridinecarboxaldehyde	872855	+1225	1600	2.00	—	—
1-(2-Thienyl)-2-nitroethene	874840	+43.3	315*	96.5	29.5	—
2-Phenylbenzothiazole	883932	—	—	—	—	10.0
Bayer 55937	886806	+238	320	81.0	—	—
Triphenyltin acetate	900958	+75.0	320	94.0-98.0	36.0	90.0-100
Monocrotophos	919448	-37.5	28.0	97.0	3.00	—
2-Chloroacrylonitrile	920376	+1150	—	8.00	—	—
Bayer 47043	922861	+62.5	—	95.0	—	—
4-Methyl-2-ethylimidazole	931362	—	—	—	—	10.0
2-Aminobenzimidazole	934327	—	—	—	—	10.0
Fonofos	944229	+165	—	86.8	—	—
Diphenyl sulfoxide	945517	—	—	—	—	10.0
Phosfolan	947024	-87.5	42.0	93.0	—	—
Diphenylsilanediol	947422	—	—	—	—	40.0
Methyltrithion	953173	+225	210	82.0-93.0	90.0	—
Tetrachlorvinphos	961115	+1125	—	10.0	—	—
2,4-Dinitrodiphenylamine	961682	—	—	—	—	0.00
Dinobuton	973217	+788	—	37.0	—	—
Norbormide	991424	+1125	28.0	10.0	—	—
Hexaphenylditin	1064104	—	—	—	—	10.0
Trimethyltin chloride	1066451	—	—	—	—	90.0
Dibutyltin diacetate	1067330	+87.5	1070	93.0	13.0	100
3-Anilinopropionitrile	1075769	+1200	—	4.00	—	—
Tetravinyltin	1112567	—	—	—	—	100

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
Dimethoxon	1113026	- 75.0	—	94.0	—	—
<i>trans</i> -1,2-Bis(propylsulfonyl)ethene	1113140	—	—	—	—	60.0
Pebulate	1114712	+ 1225	—	2.00	—	—
Vancide OD	1115066	+ 563	1600	55.0	3.00	100
Butyltin trichloride	1118463	+ 1240	—	0.80	—	60.0
Picolinal	1121604	+ 1250	—	0.00	—	—
6-Methyl-3-pyridinol	1121784	+ 1238	—	1.00	—	—
4-Acetylpyridine	1122549	+ 1000	—	20.0	—	—
4-(Dimethylamino)pyridine	1122583	+ 350	470	72.0	—	—
2-Acetylpyridine	1122629	+ 1250	—	0.00	—	—
4-Acetamidobenzenethiol	1126814	+ 1050	—	16.0	—	—
2,6-Diacetylpyridine	1129302	+ 1088	—	13.0	—	—
Diphenyltin chloride	1135995	+ 188	470	85.0	—	100
Triphenyllead chloride	1153066	+ 413	320	67.0	—	100
Bayer 56301	1156521	+ 25.0	28.0	98.0	—	—
Triphenyllead acetate	1162067	—	—	—	—	100
Copper carbonate	1184641	+ 1200	320	4.00	—	—
1,4-Dimercaptobutane	1191088	+ 1175	—	6.00	—	—
1,6-Dimercaptohexane	1191431	+ 1225	—	2.00	—	—
1,8-Octanedithiol	1191624	+ 988	—	21.0	—	—
1,10-Dimercaptodecane	1191679	- 675	1600	46.0	—	—
4-Mercaptoaniline	1193028	+ 463	320	63.0	—	—
2,6-Dichlorobenzonitrile	1194656	+ 800	—	36.0	—	—
<i>N</i> -Isopropylcyclohexylamine	1195422	+ 1163	—	7.00	—	—
Hydroquinone diacetate	1205910	—	—	—	—	20.0
Bis(4-nitrophenyl) sulfide	1223310	—	—	—	—	0.00
Zinc phosphide	1314847	—	42.0	—	54.0	—
Arsenic trioxide	1327533	+ 1250	—	0.00	—	—
Niclosamide	1420048	+ 900	—	28.0	—	—
1,3-Dibenzylthiourea	1424142	+ 1213	—	3.00	—	—
Bayer 31757	1427710	+ 1227	—	1.86	—	—
(Cyanoacetyl)urea	1448982	+ 1200	—	4.00	—	—
Nonyl mercaptan	1455216	+ 1150	—	8.00	—	—
Ethyl oxanilate	1457858	—	—	—	—	0.00
Tributyltin chloride	1461229	+ 588	710	53.0-95.0	36.0	—
Tetrabutyltin	1461252	+ 913	—	27.0-33.0	—	100
Ethylcyclohexane carbamate	1541191	+ 925	—	26.0	—	—
<i>N</i> -Dodecylmorpholine	1541817	+ 1063	—	15.0-19.0	—	—
Cyclohexyl mercaptan	1569693	+ 1000	—	20.0	—	—
Cyclohexanone semicarbazone	1589613	—	—	—	—	10.0
2-Amino-3-methylpyridine	1603403	+ 1238	—	1.00	—	—
5-Methyl-2-aminopyridine	1603414	+ 1175	—	6.00	—	—
Methyl-4-nitrocinnamate	1608362	+ 1250	—	0.00	—	40.0
3-Chloropropanesulfonyl chloride	1633825	+ 238	+ 1600	81.0	—	—
<i>n</i> -Heptyl mercaptan	1639094	+ 1113	—	11.0	—	—
Methyl- <i>m</i> -nitrocinnamate	1664591	—	—	—	—	0.00
2-Methyl-2-butanethiol	1679090	+ 1200	—	4.00	—	—
4-Hydroxyazobenzene	1689823	—	—	—	—	10.0
Ethyl fenthion	1716092	+ 87.5	—	93.0	—	—
4,4'-(1,2-Ethanediy)lbismorpholine	1723940	+ 1000	—	20.0	—	—
Triphenylgermanium sulfide	1802773	—	—	—	—	0.00
Thiobenzoyltriphenyl lead	1802864	—	—	—	—	100
Bis(triphenyllead) sulfide	1802886	—	—	—	—	70.0
Bayer 61035	1804586	- 175	94.0	86.0	—	—
<i>N</i> -Cyclohexylaniline	1821369	+ 888	—	29.0	—	—
6-Amino-2-methylpyridine	1824813	+ 1050	—	16.0	—	—
4-Chlorobenzylidenemalononitrile	1867385	+ 1238	—	1.00	—	60.0
2-Cyanoaniline	1885296	+ 1238	—	1.00	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Acid orange 10	1936158	+1150	—	8.00	—	—
AC 24055	1933502	+1161	—	7.12	—	—
Tartrazine	1934210	+725	—	42.0	—	10.0
Fast light orange G	1936158	+1150	—	8.00	—	—
<i>p</i> -(Nitrophenylsulfonyl)aniline	1948921	+1225	—	2.00	—	70.0
4-Bromophenylurea	1967255	+1225	—	2.00	—	—
Bayer 60737	1970156	-62.5	94.0	95.0	—	—
Tributyltin fluoride	1983104	+238	320	81.0	—	100
Ethyl benzylidinedicyanoacetate	2025403	+988	—	21.0	—	70.0
Aminocarb	2032599	+100	94.0	92.0	—	—
Methiocarb	2032657	+188	8.00	85.0-95.5	—	—
2',4'-Dimethylacetanilide	2050433	—	—	—	—	10.0
2,4-Dihydroxyazobenzene	2051856	—	—	—	—	10.0-20.0
4-Phenylpropylpyridine	2057490	+963	—	23.0	—	—
EPN	2104645	+37.5	—	97.0	—	—
4-Benzylpyridine	2116656	+1013	—	19.0	—	—
Diphenyllead dichloride	2117693	+463	710	63.0	—	70.0
Tributyltin methacrylate	2155706	—	—	—	—	100
Tributylantimony	2155739	—	—	—	—	100
Bis(4-chlorophenyl) carbonate	2167535	—	—	—	—	0.00
Tertapropyltin	2176989	—	—	—	—	100
Bis(triphenylgermanium) oxide	2181400	—	—	—	—	20.0
Acetimido ethyl ether hydrochloride	2208073	—	—	—	—	0.00
Bayer 51105	2210528	+213	140	83.0	—	—
4-Methoxysalicylic acid	2237367	+1250	—	0.00	—	—
<i>gamma</i> -Phenoxybutyronitrile	2243438	—	—	—	—	10.0
<i>m</i> -Nitrobenzeneazoresorcinol	2243745	+1238	—	1.00	—	40.0
Tripopyltin chloride	2279767	—	—	—	—	100
4-(Methoxyphenyl)thiourea	2293074	-1038	12.0	17.0	—	—
Nitrosothymolquinone oxime	2364547	+1250	—	0.00	—	—
2,3-Dimethylquinoxaline	2379557	—	—	—	—	10.0
2-Mercaptobenzoxazole	2382969	—	—	—	—	20.0
Mirex	2385855	-1125	+1600	7.00-10.0	10.0	—
1,3-Dicyclohexylurea	2387237	+1100	—	12.0	—	—
Ethyl violet	2390592	+188	320	85.0-97.9	4.00	—
2,3-Dichloropyridine	2402779	+988	—	21.0	—	—
2,6-Dichloropyridine	2402780	+1188	—	5.00	—	—
Captafol	2425061	—	—	—	—	60.0
Quinomethionate	2439012	+263	1070	79.0	0.00	—
Dodine	2439103	+62.5	94.0	95.0	—	—
Urbazid	2445070	+760	—	39.2	—	—
3,5-Dichloropyridine	2457478	+1250	—	0.00	—	—
3-Amino- <i>p</i> -toluic acid	2458120	+1238	—	1.00	—	—
Pinacolone oxime	2475936	—	—	—	—	20.0
Mercaptobenzothiazole sodium salt	2492264	+1013	—	19.0-30.0	—	80.0
Pyramat	2532492	+1138	—	9.00	—	—
Gallium acetate	2571064	—	—	—	—	30.0
2-Bromoethylamine hydrobromide	2576478	+1138	—	9.00	—	40.0
Demephion <i>S</i> -sulfone	2587942	+75.0	—	94.0	—	—
Bayer 38920	2592623	+450	—	64.0	—	—
Bayer 18510	2597037	+298	—	76.2-90.0	—	—
5-Methoxysalicylic acid	2612024	+1250	—	0.00	—	—
Ethyl <i>N</i> -(4-chlorophenyl)carbamate	2621809	-863	—	31.0	—	70.0
4-Acetoxyacetanilide	2623338	—	—	—	—	0.00
Diphenylantimony chloride	2629472	—	—	—	—	100
Mipcine	2631405	+1148	—	8.20	—	—
Bayer 30749	2636239	+28.1	—	91.0(1.00%)	—	—
Cyanophos	2636262	+50.0	—	96.0-99.0	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Bayer 39197	2668920	+1104	—	11.7–96.0	—	—
Bayer 30911	2667494	+25.0	—	98.0	—	—
Chloroneb	2675776	+1000	—	20.0	—	—
1,6-Hexanedithiol diacetate	2678297	+1180	—	5.60	—	—
Trimethacarb	2686999	+213	470	80.0–83.0	—	—
2-Chlorobenzylidenemalononitrile	2698411	+175	—	86.0	—	100
Bayer 29952	2703131	+50.0	—	96.0	—	—
SD 4092	2703619	+380	—	69.6	—	—
2-(2-Aminoethyl)pyridine	2706561	+1213	—	3.00	—	—
Enticide	2728021	+1250	—	0.00	—	—
Dibutyltin bis(2-ethylhexoate)	2781104	+62.5	1075	95.0	—	90.0–100
Benzylidene methyl phosphorodithioate	2782709	+375	—	70.0	—	—
Tetramethylthiourea	2782914	+1050	—	16.0	—	—
Bayer 60738	2799953	–138	62.0	89.0	—	—
Hexaphenyldigermane	2816399	—	—	—	—	10.0
<i>p</i> -Bromobenzal malononitrile	2826246	+1200	—	4.00	—	60.0
Anisalmalononitrile	2826268	+1188	—	6.00	—	80.0
3-Nitrobenzylidenemalononitrile	2826326	+1075	—	14.0	—	100
Bayer 47416	2830866	–62.5	—	95.0	—	—
Bayer 47185	2830877	+288	—	77.0	—	—
<i>o</i> -Methoxybenzalmalononitrile	2834108	—	—	—	—	100
<i>N</i> -Cyclohexylaminoethanol	2842388	+1125	—	10.0	—	—
10-Chlorophenoxyarsine	2865705	+100	42.0	92.0	—	—
Pentachlorophenyl trichloroacetate	2879609	+1156	—	7.47	—	—
Octadecyl mercaptan	2885009	+888	—	29.0	—	—
Bayer 29491	2951179	+12.5	—	99.0	—	—
Dimethyltetrachloroethyl thiohydantoin	2939971	+138	710	89.0	7.00	100
Bayer 42903	2989658	+513	710	59.0	4.00	—
1,3-Diisopropylthiourea	2986176	+238	+470–1070	81.0	—	—
2-Methylmercaptoaniline	2987533	—	—	—	—	100
Tricyclohexyltin chloride	3091325	—	—	—	—	100
Trinitrobenzene-aniline complex	3101799	+75.0	1070	94.0	1.00	—
Hexaphenyldilead	3124014	—	—	—	—	20.0
Triphenylmethyllead	3124285	—	—	—	—	100
Phenacridan chloride	3131086	+750	—	40.0	—	100
Tribenzyltin chloride	3151415	—	—	—	—	100
1-(3-Pyridyl)-2-nitropropene	3156534	+86.7	210	93.1	34.8	—
Bayer 30468	3186127	–62.5	—	95.0	—	—
Bayer 30237	3186149	–75.0	—	94.0	—	—
Bayer 23248	3212188	+268	—	77.0	—	—
Bayer 22684	3212199	+25.0	—	98.0	—	—
Aspon	3244904	+690	—	44.8	—	—
GC 6506	3254635	+50.0	—	96.0	—	—
Tripropyltin acetate	3267785	+62.5	210	95.0	—	100
Hercules 7644	3279467	—	—	—	—	90.0
6-Methyl-2-pyridone	3279763	+1175	—	6.00	—	—
R 55	3304970	+338	+1600	73.0	1.00	—
Bayer 30750	3309715	–25.0	—	96.0(1.00%)	—	—
SD 4239	3309771	+743	—	40.6	—	—
SD 2801	3309839	+1188	—	5.00	—	—
1-(2-Methoxyphenyl)-2-nitroethene	3316243	+30.0	1059*	97.6	42.5	—
Triamyltin chloride	3342674	—	—	—	—	100
Ethyl isodehydroacetate	3385340	+1233	+100	1.33	—	—
Methyl 3-bromopropionate	3395913	—	—	—	—	0.00
1,9-Nonanedithiol	3489289	+755	+1600	38.0	—	—
Bayer 37343	3506283	+87.5	—	93.0	—	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup>
			ALD (mg/kg)	FR (%)	FRdf (%)	REP (%)
Diethyl tetrahydrofurfuryl phosphorothioate	3513926	+ 588	—	53.0	—	—
Diocetyl tin dichloride	3542367	—	—	—	—	100
4-Amino-3-methoxyazobenzene	3544238	+ 1188	—	5.00	—	30.0
(4-Aminophenyl)acetonitrile	3544250	+ 950	—	24.0	—	—
1-Methyl-3-piperidinol	3554743	+ 1250	—	0.00	—	—
Bayer 16574	3568512	+ 25.0	—	98.0	—	—
Bayer 34042	3568567	- 6.25	—	99.0(1.00%)	—	—
Tetraoctyltin	3590849	—	—	—	—	0.00
Triphenylead methyl sulphide	3600122	+ 713	—	43.0	—	100
Thiopropyltriphenyllead	3600133	—	—	—	—	100
Thiobenzyltriphenyllead	3600144	—	—	—	—	100
Bayer 24869	3686917	+ 125	—	90.0	—	—
2,4-Dichlorophenyl methanesulfonate	3687136	—	1070	—	—	—
Chlorophacinone	3691358	- 739	1.00-3.75	40.9	4.69	—
Hercules 8717	3692908	—	—	—	—	90.0
Triphenylmethyl mercaptan	3695770	+ 1188	—	5.00	—	—
3-Picolylamine	3731520	+ 1038	—	17.0	—	—
4-Aminomethylpyridine	3731531	+ 1213	—	3.0	—	—
Bayer 18779	3733844	+ 783	—	37.4	—	—
Denatonium benzoate	3734336	+ 1225	—	2.00	—	—
Brilliant colacid red G	3734676	+ 1088	—	13.0	—	—
Diloxanide furoate	3736810	+ 350	710	72.0	—	—
Tetraamyltin	3765659	—	—	—	—	20.0
2-sec-Butylphenyl methylcarbamate	3766812	+ 1175	—	6.00	—	—
Tetraethyl diphosphine disulfide	3790236	+ 850	—	32.0	—	—
4,4'-Dinitroethyl centralite	3846499	+ 1238	—	1.00	—	70.0
Methylthiotriphenyl germane	3860820	—	—	—	—	10.0
Triphenylphosphine sulfide	3878453	—	—	—	—	30.0
Nickel diethyl dithiophosphate	3911055	+ 725	470	42.0	—	—
Triphenyltin sulfide	3958198	—	—	—	—	100
Gophacide	4104147	- 74.1	18.0	76.0-83.0	21.0	—
Bayer 52957	4156449	+ 62.5	140	95.0	—	—
alpha-Chlorobutyronitrile	4158376	—	—	—	—	10.0
1,4-Piperazinedicarboxaldehyde	4164390	+ 1225	—	2.00	—	—
Dibutyltin sulfide	4253229	+ 313	1070	75.0	—	100
2-Fluorethyl-4-biphenyl acetate	4301502	- 200	—	84.0	35.0	100
Tributyltin benzoate	4342363	+ 37.5	1600	97.0	—	100
Mucochloric anhydride	4412093	+ 1169	—	6.50	—	—
1-(beta-Hydroxyphenethyl)morpholine	4432342	—	—	—	—	10.0
2-Chloro-5-nitropyridine	4548452	+ 1188	—	5.00	—	—
Tri-n-propyltin oxide	4631634	—	—	—	—	100
Olelypiperidide	4637461	—	—	—	—	0.00
5-Chloro-4'-nitrosalicylanilide	4638497	+ 1063	—	15.0	—	—
Guinea green B	4680788	+ 1250	—	0.00	—	—
Diphenylbismuth acetate	4723244	—	—	—	—	100
Trioctylphosphine	4731537	—	—	—	—	60.0
Cinnamylacetophenone	4746092	—	—	—	—	10.0
Tributyltin sulfide	4808304	+ 113	470	91.0	55.0	100
Hydroxynicotinic acid	5006666	+ 1250	—	0.00	—	—
GC 8266	5034582	+ 763	—	39.0	—	—
Diphenylantimony 2-ethylhexanoate	5035585	—	—	—	—	100
Tributyltin 2-ethylhexonate	5035676	—	710	100	20.0	90.0
Diphenylbismuth chloride	5153286	—	—	—	—	100
Phenylmercaptoacetonitrile	5219614	+ 700	470	44.0	—	—
p-Nitrobenzeneazo-alpha-naphthol	5290620	—	—	—	—	40.0
Olelymorpholide	5299525	+ 300	—	76.0	—	40.0

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
4-Bromobutyronitrile	5332069	+ 1225	—	2.00	—	—
Undecyl mercaptan	5332525	+ 1138	—	9.00	—	—
2-Mercapto-4,5-dimethylthiazole	5351519	—	—	—	—	10.0
4,6-Di- <i>tert</i> -butylresorcinol	5374061	+ 150	710	88.0	—	—
Ethyl <i>m</i> -nitrocinnamate	5396714	—	—	—	—	10.0
4,6-Dimethyl-2-pyridinamine	5407874	+ 738	—	41.0	—	—
5-Bromovaleronitrile	5414211	+ 1188	—	5.00	—	—
3-Benzoylpyridine	5424191	+ 975	—	22.0	—	—
Cinnamylidenemalononitrile	5439394	+ 1013	—	19.0	—	100
<i>n</i> -Nonyl chloroacetate	5451967	—	—	—	—	10.0
2-Chloro-3-nitropyridine	5470188	+ 925	—	26.0	—	—
2-(Benzylamino)ethanethiol	5478347	—	—	—	—	—
Salicylsalicylic acid	5529431	+ 1250	—	0.00	—	—
Bromochlorenone	5579851	—	—	—	—	80.0
2-(Dimethylamino)pyridine	5683330	+ 1225	—	2.00	—	—
Bayer 16948	5823110	+ 163	—	87.0	—	—
Bayer 18341	5823176	+ 444	—	64.5	—	—
Bayer 18935	5823212	+ 1194	—	4.50	—	—
Bayer 18613	5823256	+ 1143	—	8.60	—	—
Vancide 30	5825901	—	—	—	—	30.0
Bayer 19994	5826959	+ 939	—	25.1	—	—
Tetrauryltin	5827565	—	—	—	—	70.0
Bayer 20743	5835950	+ 348	—	72.1	—	—
2,3-Dibromo-1-methoxypropane	5836668	+ 1226	—	1.90	—	—
R 3422	5840959	+ 263	470	79.0	—	—
2-(Butylamino)ethanethiol	5842002	+ 438	1600	65.0	—	—
Tributyltin hydroxyacetate	5847483	+ 12.5	470	99.0	11.0	100
Dibutyltin dibenzoate	5847541	—	—	—	—	90.0
Dibutyltin stearate	5847552	+ 227	470–1600	81.9–86.0	7.00	100
Tributyltin propionate	5863729	—	710	100	—	100
Bayer 20172	5902465	+ 75.0	—	94.0	—	—
Bayer 24882	5903082	+ 300	—	76.0	—	—
2-(Cyclohexylamino)ethanethiol	5977968	+ 1000	—	20.0	—	—
2-(Benzylamino)ethanethiol	5978347	+ 1125	—	10.0	—	—
Copper acetate monohydrate	6046931	+ 1063	1600	15.0	—	—
4-Chlorobenzyl mercaptan	6258668	+ 1213	—	3.00	—	—
Dimethylnitrooxopropyl carboxylic acid ester	6272873	+ 813	+ 100	34.9	—	—
Di- <i>n</i> -butylamine hydrochloride	6287407	—	—	—	—	20.0
Thiodipropionhydrazide	6292688	—	—	—	—	0.00
<i>n</i> -Hexyl sulfide	6294311	+ 1246	+ 470	0.26	—	—
2-Chloro-3-pyridinamine	6298197	+ 1213	—	3.00	—	—
2-( <i>p</i> -Chlorobenzoyl)pyridine	6318510	+ 988	—	21.0	—	—
4-Chloro-2,5-dimethoxyaniline	6358641	+ 713	—	43.0	—	—
Sodium bithionolate	6385586	—	—	—	—	70.0
Allyloxycarb	6392467	+ 213	62.0	83.0	—	—
Dibutylidiphenyltin	6452615	—	—	—	—	100
3'-Chloro-5-nitrosalicylanilide	6505755	+ 1238	710	1.00	—	—
2,4,6-Trisopropylbenzenesulfonyl chloride	6553964	+ 1125	—	10.0	—	—
1,3-Bis(carboxypentyl)thiourea	6630053	+ 725	—	42.0	—	—
2-Anilinopyridine	6631374	+ 1250	—	0.00	—	—
6-Amino-1,3-dimethyluracil	6642315	+ 1163	—	7.00	—	—
3-Hydroxypiperidine	6859990	+ 1250	—	0.00	—	—
2,5-Dimethoxy-4-nitrochlorobenzene	6940530	+ 1250	—	0.00	—	—
3-Bromobenzonitrile	6952596	+ 1250	—	0.00	—	—
3-Butoxypropionitrile	6959713	—	—	—	—	0.00–10.0

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
3-Pyridylcarbinol 1-oxide	6968725	+ 1200	—	4.00	—	—
Salicylal malononitrile	6968929	—	—	—	—	10.0
Bis(diphenylantimony) oxide	7065227	—	—	—	—	100
2-Chloro-4-acetoluidide	7149793	+ 1250	—	0.00	—	—
Bayer 56582	7205223	+ 425	62.0	66.0	—	—
<i>N</i> -(3-Dimethylaminopropyl)-2-pyrrolidinone	7375157	+ 1230	1600	1.60	—	—
4-Chloropyridine hydrochloride	7379353	+ 825	—	34.0	—	—
DID 100	7393660	+ 100	320	92.0	53.0	—
6-Amino-2-benzothiazole	7442071	—	—	—	—	10.0
1-(3-Aminopropyl)-2-pyrrolidinone	7663776	+ 1250	1600	0.00	—	—
Sodium fluoride	7681494	- 900	—	28.0	—	—
Crotoxypfos	7700176	+ 175	—	86.0	—	—
Starlicide	7745893	+ 163	+ 1600	87.0	0.00	—
Lead dichloride	7758954	—	—	—	—	10.0
Tin dichloride	7772998	—	—	—	—	60.0
Calcium arsenate	7778441	+ 375	1600	70.0	—	—
Potassium aluminum sulfate dodecahydrate	7784249	+ 950	—	24.0	—	—
Aluminum ammonium sulfate	7784250	+ 1247	—	0.260–22.0	—	—
Nickel chloride hexahydrate	7791200	+ 888	—	29.0	—	—
Vancide 51	8000962	+ 1238	—	1.00	—	50.0
Creosote	8001589	+ 863	1600–+ 1600	31.0	—	—
Bone oil	8001852	+ 738	—	41.0	—	—
Dinitrotrichlorobenzene	8003461	+ 1125	710	90.0	12.0	100
Patchouli oil	8014093	+ 1150	—	8.00	—	—
Ditran	8015541	+ 1157	—	7.47	—	—
Polysub 164	9009523	+ 850	—	32.0	—	—
Tintetrachloride pentahydrate	10026069	—	—	—	—	0.00
Thallium sulfate	10031591	- 659	42.0	47.3	—	—
Butyl mercaptoacetate	10047286	+ 1238	—	1.00	—	—
CL 38906	10191749	- 25.0	2.40	98.0	3.00	—
Methamidophos	10265926	- 77.8	—	93.7	—	—
Copper 8-hydroxyquinolate	10380286	—	—	—	—	40.0
Resmethrin	10453868	+ 1230	1070	1.60	—	—
Age Rite Gel	11132799	—	—	—	—	80.0
Micolutena destacina	12764475	—	—	—	—	100
TD 5056	12765843	+ 1250	470	0.00	—	—
Bayer 19596	13073502	+ 1130	—	9.60	—	—
Tricyclohexyltin hydroxide	13121705	+ 37.5	710	97.0	—	—
2- <i>tert</i> -Butyl-4,6-dinitrophenyl carbamate	13268967	+ 1213	1600	3.00	—	—
Tris-(tributyltin) phosphate	13435057	+ 100	1600	92.0	14.0	100
Zinc ethyl xanthate	13435488	—	—	—	—	60.0
Zinc pyrithione	13463417	- 613	1070	51.0	7.00	100
Sodium arsenate	13464385	- 563	1600–+ 1600	55.0–58.5	7.60	—
Gallium nitrate	13494901	—	—	—	—	30.0
Gallium sulfate	13494912	—	—	—	—	10.0
Quinalphos	13593038	+ 1173	—	6.13	—	—
Thiophosphoric acid	13598511	+ 238	210	81.0	7.00	—
Bayer 59680	13636334	+ 550	320	56.0	—	—
Nickel thiocyanate	13689924	+ 1063	—	15.0	—	—
Nickel dibutylidithiocarbamate	13927770	+ 1213	—	3.00	—	—
1,1, <i>N,N</i> -Tetramethyl-2-butynylamine	14010732	+ 1050	1600	3.70–16.0	—	—
Zinc acetylacetonate	14024636	—	—	—	—	60.0
Parbendazole	14255879	+ 1238	710	1.00	—	—
Bis(tributyltin) maleate	14275571	—	—	—	—	100

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
Tetrakis(lauralamino)zinc chloride	14302013	+ 1075	—	14.0	—	90.0
SD 3450	14458958	- 125	5.50	86.0-90.0	—	—
4-Benzoylpyridine	14548460	+ 1113	—	11.0	—	—
4-( <i>p</i> -Chlorobenzoyl)pyridine	14548482	+ 1150	—	8.00	—	—
Phoxim	14816183	+ 200	1070	84.0	—	—
Tris(ethylenediamine)nickel chloride	15390995	+ 1063	—	15.0	—	—
Triphenyllead phenyl sulfide	15590779	+ 838	1600	33.0-61.0	8.00	100
Thioacetyl triphenyllead	15590780	—	—	—	—	80.0-100
Diphenyltin dilaurate	15827142	—	—	—	—	50.0
RE 5454	15942480	+ 188	42.0	85.0	—	—
2,4,5-Trichlorobenzenesulfonyl chloride	15945070	+ 1250	—	0.00	—	—
Diocetyl tin maleate	16091182	—	—	—	—	40.0
1,2-Dimercaptobutane	16128680	+ 1238	—	1.00	—	—
2-Pyridylacetic acid hydrochloride	16179978	+ 1213	—	3.00	—	—
Bayer 22893	16211066	+ 1193	—	4.60	—	—
Bayer 78175	16548122	+ 700	1600	44.0	—	—
3-(Pentyloxy)propionitrile	16728475	—	—	—	—	0.00
3-Octyloxypropanenitrile	16728497	—	—	—	—	0.00
3-Decyloxypropanenitrile	16728511	—	—	—	—	20.0
Methomyl	16752775	—	—	—	—	70.0
Ethyl 4-nitrophenyl carbamate	17576419	+ 1213	—	3.00	—	70.0
Bis( <i>n</i> -octyl)tin diacetate	17586946	+ 180	+ 1600	85.6	9.33	100
Dodecylamine picrate	17623415	+ 1075	—	14.0	—	60.0
Dicaphthoxon	17650769	+ 25.0	42.0	98.0	—	—
Bayer 72368	17826276	+ 638	1070	49.0	—	—
Bayer 78658	17826334	—	1070	—	—	—
Bayer 62414	17826425	+ 450	320	64.0	—	—
Bayer 80564	17826447	—	710	—	—	—
Bayer 80565	17826458	—	710	—	—	—
Bayer 81174	17826481	+ 1150	710	8.00	—	—
Diphenyldivinylsilane	17937687	+ 763	—	39.0	—	—
Bayer 50536	18151092	+ 250	140	80.0	—	—
Diisobutylamine hydrochloride	18251826	+ 938	—	25.0	—	40.0
Tetradecyl chloroacetate	18277866	—	—	—	—	10.0
4-(3-Phenylpropyl)piperidine	18495824	+ 713	—	43.0	—	—
Bayer 69047	19645422	+ 363	470	71.0	—	—
3,5-Di- <i>tert</i> -butylsalicylic acid	19715196	+ 950	—	24.0	—	—
Chlordimeform hydrochloride	19750959	+ 963	—	23.0	—	—
Pelargonal piperidide	20368132	+ 325	—	74.0	—	50.0
Tin oxide	21651194	+ 775	—	38.0	—	100
Fenamiphos	22224926	- 100	18.0	92.0	—	—
1-(3,4-Methylenedioxy)phenyl-2-nitroethene	22482435	+ 130	706*	89.6	44.7	—
Win 29148a	22683223	- 22.2	0.350*- 0.360*	98.2	87.7	—
4-Dimethylaminosalicylic acid	23050911	+ 1250	—	0.00-1.00	—	—
Formetanate hydrochloride	24353615	—	28.0	—	—	—
Optunal	23422539	+ 288	94.0	77.0	—	—
3-Phenylpropyl mercaptan	24734687	+ 1125	—	10.0	—	—
Polyethylene sulfide	24936672	—	—	—	—	12.0
Bayer 91273	25205087	—	18.0	—	—	—
Bayer 46676	25537466	+ 25.0	—	98.0	—	—
Bayer 51896	25918541	- 62.5	42.0	95.0	—	—
Tetrahydrodimethyloxadiazine-4-thione	25952356	+ 1050	1600	16.0	—	—
Polytributyltin methacrylate	26354154	—	—	—	—	90.0



Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>50</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
Tributyltin sulfate	26377048	+ 238	710	81.0	—	—
4,6-Dibenzylresorcinol	26388275	+ 1125	—	10.0	—	—
Age Rite Resin D	26780961	—	—	—	—	30.0–50.0
<i>N</i> -Cyclohexyl- <i>beta</i> -alanine	26872844	+ 1250	—	0.00	—	—
Sucrose octaacetate	27641196	+ 1014	+ 1600	18.9–22.4	—	—
<i>DL</i> -Menthyl chloroacetate	27994883	+ 1213	—	3.00	—	30.0
Tributyltin phosphate	28089341	+ 488	+ 1600	61.0	—	—
Bayer 89504	28334863	+ 888	—	29.0	—	—
Tributyltin neodecanoate	28801696	+ 25.0	1070	98.0	30.0	100
1-( <i>p</i> -Chlorophenyl)silatrane	29025670	– 37.5	8.00	97.0	50.0	—
Thiocarboxime	29118874	+ 488	140	61.0	—	—
2-(2-Aminoethylamino)-5-nitropyridine	29602399	+ 1238	—	1.00	—	—
Amygdalin	29883156	+ 1225	—	2.00	—	—
2-Acetylpyridine	30440881	+ 1250	—	0.00	—	—
5-(Methylthio)salicylic acid	32318426	+ 1217	—	2.67	—	—
Bay 26405	32357996	+ 410	—	67.2	—	—
SD 4457	32425904	+ 1200	—	4.00	—	—
Lead ethylmercaptide	32812832	—	—	—	—	0.00
Lead butylmercaptide	32812854	—	—	—	—	0.00
Lead phenylmercaptide	32812898	—	—	—	—	10.0
Amobam T	33233066	—	—	—	—	90.0
2-(2-Nitropropenyl)furan	33322202	+ 137	173*	89.1	39.3	—
Trichlorophenyl acetate	33639246	+ 1225	—	2.00	—	—
Chemagro 5461	34491128	+ 425	210	66.0	—	—
<i>N,N'</i> -Dimethyldinitrocarbanilide	34594473	+ 1213	—	3.00	—	—
2,3,4-Trichlorobenzene sulfonyl chloride	34732097	+ 1213	—	3.00	—	—
1-(6-Aminoethyl)-2-pyrrolidinone	34751423	+ 1100	+ 1070	12.0	—	—
Lead methylmercaptide	35029960	—	—	—	—	20.0
1,3-Cyclopentanedisulfonyl difluoride	35944731	– 75.0	94.0	94.0	—	—
Dowco 160	35944822	+ 75.0	—	94.0	0.00	—
Dowco 133	35944833	+ 200	—	84.0	0.00	—
GC 4276	35944866	– 25.0	—	98.0	—	—
Ziram cyclohexylamine complex	36530231	+ 613	1070	51.0	0.00	—
Diphenyllead bis(allylarsenate)	36654076	—	—	—	—	100
Lead benzylmercaptide	36688809	—	—	—	—	100
4-Amino-2,2,6,6-tetramethylpiperidine	36768624	+ 1138	—	9.00	—	—
Methenamineallyl iodide	36895622	—	—	—	—	0.00
Onyxide 172	37335685	+ 913	—	27.0	—	—
Stalite S	37338628	—	—	—	—	60.0
Cyclohexylmethylcyclohexylphenylurea	37942726	+ 180	+ 480	85.6	42.8	—
Hydroxymethylpyridine carboxylic acid	38116619	+ 1075	—	14.0	—	—
Diphenyllead bis(methylarsenate)	38873391	—	—	—	—	80.0
Onyxide 3300	39387423	+ 1063	—	15.0	—	—
Diphenyl- <i>p</i> -phenylenediamine	39529221	—	—	—	—	10.0
Nickel trifluoroacetate	40621076	+ 863	—	31.0	—	—
Diiosophorone hydrazone	42398174	+ 50.0	—	96.2	—	—
Lead propylmercaptide	51285520	—	—	—	—	20.0
<i>beta</i> -Propoxypropionitrile	51299822	—	—	—	—	10.0
3-Pyridylmethyl <i>N</i> -4'-nitrophenyl carbamate	51594833	+ 350	26.0*–34.5*	70.4	1.85–7.07	—
Pyridylmethyl (methylthio)phenyl carbamate	51594866	– 210	22.3*–31.7*	83.2	—	—
Crotonylcarbutamide	52964428	—	—	—	—	10.0
Phenyl- and naphthylamine mixture	53028414	—	—	—	—	20.0–60.0
1-(4-Aminobutyl)-2-pyrrolidinone	53653648	+ 1240	1600	0.800	—	—
Acetylcyclohexylmethylcyclohexylamine	53710615	+ 36.6	+ 480	97.1	45.3–49.6	—

Table 1. (cont'd)

Name	Registry Number (CAS)	LD <sub>fr</sub> (mg/kg/day)	Deer mouse <sup>a</sup>			House mouse <sup>a</sup> REP (%)
			ALD (mg/kg)	FR (%)	FRdf (%)	
Methyldihydrocitrazinate	5605562	—	—	—	—	20.0
Bayer 80283	57004872	—	320	—	—	—
Styrenated phenols	57157810	—	—	—	—	80.0
<i>beta</i> -Isobutoxypropionitrile	58936280	—	—	—	—	0.00
<i>beta</i> -Isoamyloxypropionitrile	58936291	—	—	—	—	0.00
Mixture of polybutylated bisphenols	60616946	—	—	—	—	100
U 12171	61164098	+ 1213	1070	3.00	—	—
Cocoamine, ethoxylated	61791148	+ 1200	—	4.00	—	67.0
Bayer 47940	63981113	+ 37.5	—	97.0	—	—
Bayer 60564	64205227	+ 125	94.0	90.0	—	—
Bayer 38500	65324063	+ 138	—	89.0	—	—
Polytriphenyltin methacrylate	68864040	+ 113	470	91.0	50.0	100
Age Rite Resin	69772141	—	—	—	—	60.0
1-(3-Thiouridopropyl)-2-pyrrolidinone	74764617	+ 1146	+ 1600	8.27	—	—
Oleyl carbamate	74893075	+ 1238	—	1.00	—	—
Lilly 28764	74987874	+ 1075	—	14.0	—	—
3-(2-Aminobutyl)-6-fluoroindole hydrochloride	81603647	+ 225	470	82.0	—	—
Tetrakis( <i>n</i> -hexylamino)boronium chloride	82679865	+ 1075	—	14.0	—	50.0–70.0
1,3-Bis((3-oleylamino)propyl)thiourea	82769876	—	—	—	—	20.0
Phenylacridinium thiocyanate	82679887	+ 25.0	470	98.0	0.00	100
Bayer 56200	82679901	+ 375	62.0	70.0	—	—
Bayer 50512	82679912	+ 363	320	71.0	—	—
Bayer 56194	82679923	+ 1013	—	19.0	—	—
Bayer 51932	82980436	– 25.0	62.0	98.0	—	—
Bayer 52752	82980447	+ 87.5	62.0	93.0	—	—
Bayer 60830	82980469	– 138	8.00	89.0	71.0	—

<sup>a</sup> Test abbreviations used as follows (see text for detailed description):

LD<sub>fr</sub>—Amount of chemical ingested during the FR test which killed or did not kill more than 50% of the test mice

ALD—Approximate Lethal Dose (acute oral); \* indicates an LD<sub>50</sub>

FR—Food Reduction test using 2.0%-treated wheat seeds

FRdf—Same as FR except that Douglas fir seeds were used

REP—Percentage of mice refusing to eat more than 50% of 2.0%-treated wheat

available *ad lib*. Mortality and the number of wheat seeds consumed daily were recorded. The total number of treated seeds consumed by all mice over the 3-day test period were subtracted from the total number available. The difference was converted into the percentage of seeds refused, and the value was designated as the FR (Food Reduction).

For highly repellent or toxic chemicals, the FR test was followed by another test using treated Douglas fir seeds. These seeds more closely represented the durable and inedible seed coats encountered by wild rodents that cause reforestation seeding problems. Test procedures were similar to those used for the FR test, except that the test chemical concentration was 1.0%. Values resulting from this test were designated as FRdf.

The third repellency test method used house mice and 25 white wheat seeds treated with 2.0% of the candidate chemical. The wheat seeds were offered to 10 individually caged mice for a 5-day period along with the same alternate food used in the FR test. The test results, designated as REP, are summarized by the percentage of mice refusing to eat an average of 13 or more treated seeds per day during the 5-day test period.

### Toxicity

Two acute oral toxicity tests were also conducted on deer mice. The first, the ALD (Approximate Lethal Dose), represented a range-finding modification of the Deichman and LeBlanc (1943) method using approximately 6 animals and a graduated dosage scale. Using this single animal per level method, each succeeding treatment was 50% higher than the preceding level and continued until mortality occurred. All chemicals were administered by gavage using water, corn oil, or 1.0% carbopol as carriers, followed by 3-days of observations for mortality. The second toxicity test (LD<sub>50</sub>) was conducted on a more limited basis in a similar manner, except that 2 to 4 animals were used per geometrically spaced dosage level. The statistical method used to estimate the acute oral LD<sub>50</sub> was that of Thompson (1948) and Thompson and Weil (1952). These tests generally required from 6 to 20 animals per experiment. The final set of toxicity data was derived from the FR value, the known average weight of individual wheat seeds (50 mg) and the known average weight of each individual deer mouse (20 gm). This calculated value, the

LDfr, represented the average amount of chemical, in mg/kg/day, that was ingested by each animal over the 3-day test period without killing more than 50% of the test animals.

## Results

The results of the tests conducted with 933 chemicals are presented in Table 1. Of the chemicals tested, ALD's (or LD<sub>50</sub>'s) on deer mice were available for 230 chemicals, FR's (and usually LDfr's) for 696 chemicals and REP values on house mice for 347 chemicals. No statistical correlations were attempted between FR and ALD or LD<sub>50</sub> values or REP and ALD values, because of the multi-day nature of the FR and REP studies and the approximation assumed by the ALD.

We feel that the ALD or LDfr and the FR and/or REP values could be used to generate potential hazard indexes for acute and/or sub-acute exposure of wild mammals to chemicals in the environment. Such an index, or even a visual interpretation of the data presented, should provide the reader with an approximate idea of the potential for ingestion and subsequent mortality in wild mammalians exposed to the listed chemicals. Such an index, if generated and defined as the one proposed by Schafer *et al* (1983), may serve as an additional predictive tool in determining potential mammalian mortality following environmental exposure to chemically contaminated or treated food.

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