

TABLE OF PROPERTIES OF PESTICIDES USED IN RESIDENTIAL AREAS

Common Name	Product (s) (partial)	Category	Toxicity	Pesticide Movement Rating	Soil Half-life (days)	Water Solubility (mg/l)	Soil Sorption Coefficient (Koc)
Fungicides							
<i>Axoxystrobin</i>	Heritage	Fungicide	<i>Fish--intermediate (D)</i> Limited by low solubility in water	Low	65 Aerobic-112 Anaerobic-119 hydrolysis-31 (D)	6	581.0
<i>Azadirachtin*</i>	Neem Oil	Fungicide (botanical, non- systemic)	<i>Fish--high (D)</i> <i>Birds, earthworms,</i> <i>mammals--non-toxic (B)</i>	High	26	.05	7
<i>Captan*</i> (phthalimide)	Agrox	Fungicide non-systemic	<i>Fish--intermediate (D)</i> <i>--high (B)</i> <i>Aquatic inverts--moderate</i> <i>Birds--low (B)</i>	Very Low	2.5 1-10 (B)	5.1	200
<i>Chlorothalonil*W</i> (organochlorine)	Ortho Daconil Bravo	Fungicide	<i>Fish--High (D)</i> <i>Aquatic organisms--high</i> <i>Bees--nontoxic</i> <i>Birds--nontoxic (B)</i>	Low	30 Aerobic-30 Anaerobic-90 (D)	0.6	1380
<i>Copper</i> (copper sulphate)	Cuproxat, Kocide, Bordeaux mixture	Fungicide (also used as algicide, source of toxicity data)	<i>Fish--high (D)</i> Moderate-high (B) <i>Aquatic inverts--mod-high</i>	Moderate	4	10,000	30
<i>Etridiazole</i>	Koban, banrot, Truban	Fungicide	<i>Fish-low (D)</i>	Moderate	103	50	1000
<i>Fenarimol</i>	Rubigan	Fungicide	<i>Fish-low (D)</i>	High	360	14	600
<i>Ferbam</i>	<i>Discontinued</i>	Fungicide	<i>Fish-low (D)</i>	Low	17	120	300

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<i>Flutolanil</i>	Prostar	Fungicide	<i>Fish</i> --low (D)	Low	116	9.6	800
<i>Fosetyl-aluminum</i>	Aliette, Prodigy, Signature	Fungicide	<i>Fish</i> --very low (D)	Extremely Low	0.1	120,000	20
<i>Iprodione</i>	Chipco 26019, Rovral	Fungicide	<i>Fish</i> --low (D) <i>Birds</i> --slight (B)	Low	14 7-60 (B)	13.9	700
<i>Mancozeb</i> (dicarboximide)	Protect, Fore, Dithane	Fungicide non-systemic, contact	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --high <i>Birds</i> --slight <i>Bees</i> --non-toxic (B)	Low	70 1-7 (B), but a breakdown product, ETU, persists 5-10 weeks 70	6	2000
<i>Maneb</i> (ethelene (bis) dithiocarbamate)	Manesan, Manex, Nereb, Newspor	Fungicide, fruits vegetables, ornamentals	<i>Fish</i> --high (D) <i>Bees</i> --non-toxic (B)	Low	70 (A) 12 – 36 1 hr. in water	6	2000
<i>Metalaxyl</i> (benzenoid)	Subdue	Fungicide, systemic, foliar spray, soil & seed treatment	<i>Fish</i> --very low (D) <i>Aquatic inverts</i> --slight <i>Birds</i> --negligible <i>Bees</i> --non-toxic (B)	Very High	70	8400	50
<i>Myclobutanil</i> *w	Immunox, Eagle, Systhan	Fungicide systemic	<i>Fish</i> --low (D)	Moderate	66	142	500
<i>PCNB, quintozene</i> (organochlorine)	Terrachlor, Engage, Revere	Fungicide seed treatment, wettable powder, granules, dust emulsifiable concentrate	<i>Fish</i> --intermediate (D) --high (B), limited by low solubility, bio-accumulates <i>Birds</i> --non-toxic <i>Bees</i> --non-toxic (B)	Very Low	21 21-365+ soil (B) 1.8 – 5 days in water, volatile	0.44	5000

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<i>Propamocarb</i> (carbamate)	Banol	Fungicide	<i>Fish</i> --very low (D)	Extremely Low	30	1,000,000	1,000,000
<i>Propiconazole</i>	Alamo, Banner	Fungicide	<i>Fish</i> --low (D)	Moderate	110	110	650
<i>Streptomycin sulfate</i> *		Fungicide	No data	Extremely Low	1	20,000	339
<i>Sulphur</i> *	Safer, Cosan, Tiolene	Fungicide, non- systemic, contact	<i>Fish & aquatic Inverts</i> -- nontoxic <i>Birds</i> --non-toxic <i>Bees</i> --non-toxic (B)	Low	Slow transformation to sulphate (B)	Practically insoluble (B)	NA B
<i>Thiabendazole</i> (benzimidazole)	Arbotect	Fungicide, systemic, wetttable powder, liquid	<i>Fish</i> --intermediate (D) <i>Earthworms</i> --toxic <i>Bees</i> --non-toxic (B)	Low	403	50	2500
<i>Thiophanate- methyl</i> *	Banrot, Nonide, Cavalier	Fungicide, ornamentals, turf	<i>Fish</i> --high (D) <i>Fish</i> --slight <i>Crustaceans</i> --high (E)	Very Low	10	3.5	1830
<i>Triadimefon</i> * (triazole)	Bayleton, Strike, Accost	Fungicide, systemic, wetttable powder, granular, paste, emuls.concentrate	<i>Fish</i> --intermediate (D) <i>Bees</i> --non-toxic <i>Birds</i> --slight to non-toxic	Moderate	26 14-60 (B)	71.5	300
<i>Triforine</i> * (piperazine derivative)	Brolly, Funginex	Fungicide systemic	Very low (D)	Moderate	21	30	200
<i>Vinclozolin</i> (dicarboximide)	Curalan, Touche	Fungicide non- systemic (dust, wetttable powder)	<i>Fish</i> --low (D) <i>Fish</i> --intermediate (B) <i>Bees/earthworms</i> --non-tox.	Moderate	20 3-21 (B)	1000 3.4 (B)	100 higher if much organic matter (B)

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Common Name	Product (s) (partial)	Category	Toxicity	Pesticide Movement Rating	Soil Half-life (days)	Water Solubility (mg/l)	Soil Sorption Coefficient (Koc)
<i>Ziram</i> * (dithiocarbamate)	Ziram	Rabbit repellents, Fungicide (granules, wetable powder)	<i>Fish</i> --extra high (D) <i>Birds</i> --non-toxic to moderate (B)	Moderate	30	65	400
Herbicides							
<i>2,4-D amine</i> * w(phenoxy)	Trimec, Ortho Weed-B-Gon with MCPP &Dicamba	Herbicide post-emergence	<i>Fish</i> --low (D)	Moderate	10 (A)	796,000	20
<i>Arsenic acid</i> *	Bayer 9 with MCPP& Dicamba	Herbicide	<i>Fish</i> --very low (D)	Extremely Low	10,000 (A, C) very persistent	17,000	100,000
<i>Benefin</i> *w (Benfluralin) (dinitroaniline)	Preen & Green,w. other herbicides, for crabgrass	Herbicide preemergence	<i>Fish</i> --high (D) <i>Mollusks</i> --slight	Extremely Low	40 aerobic (A) 15 anaerobic (C)	0.1	9000 79.5 C
<i>Bensulide</i> (Organophosphate)	Prefar, Pre-fan, Bensumec	Herbicide preemergence	<i>Fish</i> --intermediate (D) Aquatic inverts--moderate <i>Bees</i> --high <i>Birds</i> --slight (B)	Moderate	120	5.6	1000
<i>Bentazon</i> (Bentazon sodium salt)	Basagran TO	Herbicide post- emergence	<i>Fish</i> --very low (D) <i>Mollusks</i> --very high	High (data for salt only)	20 (A)	2,300,000	34
<i>Clopyralid</i> *w (pyridine)	Lontrel, Preen & Green,Confront (w. Triclopyr)	Herbicide	<i>Fish</i> --very low (D)	Very High	30	1000	6
<i>Corn Gluten Meal</i>	several	Herbicide	Very low	No data	Very rapid	No data	No data
<i>Dicamba salt</i> *w	Ortho Weed-B- Gon with 24D & MCPP	Herbicide	<i>Fish</i> --very low (D) <i>Aquatic inverts</i> --low <i>Bees</i> --Low (B)	Very High	14 (A)	400,000	2
<i>Diquat dibromide salt</i> *	Spectracide superfast	Herbicide post-emergence	<i>Fish</i> --very low (D)	Extremely Low	1000 (A)	718,000	1,000,000

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<i>Dithiopyr</i> (pyridine)	Dimension	Herbicide preemergence	<i>Fish</i> --intermediate (D)	Very low	871 aerobic 21700 anaerobic	1	1043
<i>EPTC</i> *w	Preen for Groundcovers	Herbicide preemergence	<i>Fish</i> --very low (D) <i>Aquatic inverts</i> --low (B)	Low	6	344	200
<i>Fluazifop-p-butyl</i> *w	Ortho Grass-B-gon	Herbicide post-emergence, spot-spraying	<i>Fish</i> --low (D) --moderate-high (B) <i>Birds</i> --non-toxic <i>Bees, inverts</i> --low (B)	Very Low	15 (A) Aerobic 1 (C) Anaerobic 3 (C)	2	5700
<i>Glufosinate ammonium Salt</i> *w	Finale	Herbicide post-emergence	<i>Fish</i> --very low (D) <i>Zooplankton</i> —low	Low	7	1,370,000	100
<i>Glyphosate isopropylamine salt</i> w	Roundup, Rodeo	Herbicide post-emergence	<i>Fish</i> --low (D) <i>Aquatic inverts</i> --low (B)	Extremely Low	47	900,000	24,000
Halosulfuron	Manage	Herbicide post-emergence	<i>Fish</i> --very low (D)	Moderate (used at very low rate, 1 oz/acre)	14	1630	100
<i>Isoxaben</i>	Gallery, Snapshot (w. Trifluralin)	Herbicide pre-emergence	<i>Fish</i> --low (D) <i>Aquatic inverts</i> --high (B)	Low	100	1	1400
<i>Mecoprop, MCPP</i> *w (phenoxy; dimethylamine salt)	Ortho Weed-B-gon Bayer, with 24D & Dicamba	Herbicide post-emergence	<i>Fish</i> --very low (D) <i>Aquatic Inverts</i> --low (B)	High	21	660,000	20
<i>Metolachlor</i>	Pennant	Herbicide landscape beds	<i>Fish</i> --very low (D)	High	90	530	200
<i>MSMA</i> (methane-arsonic acid)* sodium salt) *	Crabgrass & nutgrass killer	Herbicide post-emergence	<i>Fish</i> --very low (D) <i>Aquatic inverts</i> --low (E)	Very Low	180	1,000,000	7000

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<i>Napropamide</i>	Devrinol	Herbicide preemergence	<i>Fish</i> --very low (D)	Moderate	70	74	700
<i>Oryzalin</i> (dinitroaniline)	Surflan	Herbicide preemergence	<i>Fish</i> --low (D) <i>Fish</i> --high (B) <i>Bees, birds</i> --low	Low	20	2.5	600
<i>Oxadiazon</i> (ARS)	Ronstar	Herbicide	<i>Fish</i> --intermediate (D)	Low	60 90-180	.70	3200
<i>Pelargonic acid/ Nonanoic acid</i>	Scythe	Herbicide (fatty acids)	<i>Fish</i> --low (product info on web)	No data, prob. low	No data	No data	No data
<i>Pendimethalin</i> *W (dinitroaniline)	Pendulum, Scott's Halt	Herbicide preemergence	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --high (B)	Very Low	90	0.275	5000
<i>Prodiamine</i> (dinitroaniline)	Barricade, Factor	Herbicide preemergence	<i>Fish</i> --intermediate (D) <i>Aquatic inverts</i> --low (E)	Extremely Low	120	0.013	13,000
<i>Siduron</i> *	Tupersan	Herbicide	<i>Fish</i> --very low (D)	Moderate	90	18	420
<i>Simazine</i> (triazine)	Aquazine, Princep (low res. use now)	Herbicide	<i>Fish</i> --very low (D) <i>Aquatic inverts</i> --low (B)	High	60	6.2	130
<i>Triclopyr amine</i> *w (pyridine)	Ortho Brush-B- Gon, Weed-B- Gon Confront, w Clopyralid, Preen & Green (w.others)	Herbicide systemic,woody & broadleaf wds	<i>Fish</i> --very low (D) <i>Aquatic organisms</i> --very low <i>Bees</i> --non-toxic (B)	Very High	46 2.8 – 14.1 hours in water (B)	2,100,000	20
<i>Trifluralin</i> *w (dinitroaniline)	Snapshot (w. Isoxaben), Preen & Green	Herbicide preemergence	<i>Fish</i> --High (D) <i>Aquatic organisms</i> --high <i>Birds</i> --non-toxic (B)	Very Low	60	0.3	8000
Insecticides, Miticides							
<i>Abamectin</i> (Avermectin)	Avid	Insecticide	<i>Fish</i> --very high (D)	Very Low	28 (A)	5	5000
<i>Trifluralin</i> * (dinitroaniline)	Preen, Garden weed preventer	Herbicide preemergence	<i>Fish</i> --High (D) <i>Birds</i> --non-toxic (B)	Very Low	60	0.3	8000

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Acephate *W (organophosphate)	Orthene	Insecticide General use	<i>Fish</i> --very low (D) <i>Aquatic</i> organisms --low <i>Bees</i> --high <i>Birds</i> --moderate (B)	Low	3 aerobic 6 anaerobic (B) but breakdown cpds. insecticidal	818,000 (A) degrades to immobile cpds in 20 days (B)	2
Azadirachtin (in Neem Oil)	Azatin Ornazin	Fungicide, contact, botanical	<i>Fish</i> --high (D) <i>earthworms, mammals</i> --non- toxic (B)	High	26	.05	7
Bendiocarb N (carbamate)	Turcam, <i>No longer sold</i>	Insecticide	<i>Fish</i> --low (D) <i>Birds</i> --high <i>Earthworms</i> --high (B)	Very low	5	40	570
Bifenthrin w (pyrethroid)	Talstar	Insecticide	<i>Fish</i> --extra high (D) <i>Aquatic inverts</i> --high <i>Birds</i> --moderate (B)	Extremely Low	26	0.1	240,000
Carbaryl *W (carbamate)	Sevin-5	Insecticide lawns, trees, gardens	<i>Fish</i> --intermediate (D) <i>Aquatic inverts</i> --moderate <i>Bees</i> --high (B)	Moderate	10 aerobic 6 (C) anaerobic 87 (C)	120	300
Chlorpyrifos * (organophosphate)	Dursban <i>No longer sold retail</i>	Insecticide	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --v. high (B) <i>Birds</i> --high (B)	Very Low	30	0.4 (OSU) 2 (Exttoxnet)	6070
Cyfluthrin *w (synthetic pyrethroid)	Tempo	Insecticide	Extra High (D)	Extremely low	30	.002	100,000
Cypermethrin w (synthetic pyrethroid)	Deltagard	Insecticide	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --v. high (B)	Extremely Low	30	0.004	100,000
Diazinon *w (organophosphate)	Realkill (& many others) <i>No Retail sale after 2004</i>	Insecticide, with petroleum distillates (grub control granules & other forms)	<i>Fish</i> --extra high (D) <i>Aquatic inverts</i> --very high <i>Birds</i> --high (B)	Low	40	60	1000

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<i>Dimethoate</i> (organophosphate)	Dimate	Insecticide systemic/ contact ornamentals, crop	Fish--very low (D) Birds--high Aquatic inverts--mod. (B)	Moderate	7 4-16 B	39,800	20
<i>Esfenvalerate w</i> (synthetic pyrethroid)	Ortho Bug-B- Gon, Asana X-L	Insecticide, ornamentals, fruits, vegetables	Fish--extra high (D) Aquatic inverts, bees --high 96hr LC50 trout is 0.0003 mg/l (B)	Very Low	35 15-90	0.002	5300
<i>Fenbutatin oxide</i>	Isotox	Insecticide (grubs,ants, ticks)	Fish--extra high (D) Birds, bees--high (B)	Low	90	0.0127	2300
<i>Hexythiazox</i>	Hexygon	Miticide	Fish--intermediate (D) Aquatic inverts--mod (E)	Very Low	30	0.5	6200
<i>Imidachloprid *w</i> (not OSU) neonicotinoid	Merit (Bayer)	Insecticide (granules, grub control)	Fish--very low (D) Aquatic inverts--moderate	Moderate	48-190	moderate	moderate
<i>Lambda- cyhalothrin *w</i> (Synthetic pyrethroid)	Scimitar, Spectracide Triazicide	Insecticide	Fish--extra high (D) Aquatic inverts--very high Bees--high (B)	Extremely Low	30	0.005	180,000
<i>Malathion*</i>	Realkill	Insecticide non- systemic, wide- spectrum (fruits & vegetables)	Fish--extra high (D) Aquatic inverts--high Fish--variable, low-high Birds--moderate (B)	Extremely Low	1	130	1800
<i>Metaldehyde*</i>	Ortho Bug Geta	Molluscicide (snails,slugs)	Fish--very low (D) Aquatic inverts--very low Birds--reports, no data	Low (PLP)	10 breaks down rapidly in water	230	50
<i>Milky Spore*</i> Disease	St Gabriel Laboratories & Home Harvest (Internet orders)	Insecticide (Japanese beetle grubs)	Toxic only to Japanese beetles (vendor information)	Non- mobile	Disease control persists up to 20 years	No data	No data

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Permethrin *W (synthetic pyrethroid)	Ambush, Astro	Insecticide	<i>Fish</i> --extra high (D) <i>Aquatic inverts</i> --high (B)	Extremely Low	30	0.006	100,000
Petroleum distillates	Sunspray, dormant oil	Insecticide, esp. scales, aphids	Low (safe environmentally)	Low	No data	Low	High
Pottasium salts of fatty acids w	Safer, Insecticidal soap	Insecticide	<i>Aquatic inverts</i> --low environmentally "safe"	Non-mobile	Rapidly biodegradable	No data	No data
Pymetrozine (triazine)	Endeavor	Insecticides	<i>Aquatic inverts</i> --no data; <i>mammals, humans</i> --slight (E)	Moderate	Hydrolysis 30 Aerobic 491 anaerobic 90.5(E)	290 E	1100 E
Pyrethrins *w	Safer	Insecticide (natural botanical)	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --high <i>Birds</i> --slight (B)	Extremely Low	12	0.001	100,000
Rotenone*	Cuberol	Insecticide	<i>Fish</i> --high (D) <i>Aquatic inverts</i> --very high <i>Bees</i> --nontoxic (B)	Extremely Low	3	0.2	10,000
Spinosad <i>Saccharopolyspora spinosa</i> *	Conserve	Insecticide microbial fermentation product,	Highly selectively toxic to insect targets	No data, called "environmentally safe"	No data	No data	No data
Trichlorfon w (organophosphate)	Dylox	Insecticide (selective) fruits ornamentals, vegetables, ticks	<i>Fish</i> --intermediate (D) <i>Aquatic inverts</i> --high <i>Birds</i> --moderate-high <i>Bees</i> --low (B)	High	10 (A) 3-27, rapid breakdown in aerated soil (B)	120,000	10

*Available to homeowner, retail or by mail order. Other restricted use products may be used by landscapers.

W Widespread use in residential setting according to Windsor, CT Experiment Station personnel

NOTES, continued.

Sources

- A. OSU Oregon State University) extension pesticides properties database at <http://ace.orst.edu/info/npic/ppdmmove.htm>.
- B. Exttoxnet Cornell database of pesticide properties at <http://pmep.cce.cornell.edu/profiles/exttoxnet>.
- C. USDA Beltsville Area ARS (Agricultural Research Service) pesticide properties database at <http://wizard.arsusda.gov/acsl/>
- D. The WIN-PST pesticide database, the Pesticide Screening Tool developed by the US Department of Agriculture, Natural Resource Conservation service (USDA NRCS) at <http://www.wcc.nrcs.usda.gov/water/quality/common/pestmgmt/winpst.htm>.
- E. PAN (Pesticide Action network) pesticide database at <http://www.pesticideinfo.org>

Toxicity ratings for fish were the ratings for MATC (Maximum Acceptable Total Concentration) in the WIN-PST database (D), a measure of long-term toxicity. As defined in the glossary for this database, “MATC is the long-term toxicity value for fish. The MATC for an active ingredient can be determined by performing long-term or early life-stage toxicity tests. These tests produce the No observable effect Concentration (NOEC) and lowest Observable Toxicant Concentration (LOEC) . Empirically the geometric mean of the NOEC and the LOEC is the MATC.” It may also be calculated using a regression equation from acute toxicity values (LC50 values). MATC toxicity ratings for fish used in this table, from the WIN-PST spreadsheet, are defined as follows:

Fish Toxicity Category	MATC (ppb)
Extra high	<1
High	10-1
Intermediate	100-10
Low	500-100
Very Low	>500

Additional Information on MATC (Maximum Acceptable Toxicity Concentration) for Fish is in the WIN-PST database (c) glossary. MATC ratings were largely consistent with ratings based on acute toxicity tests, used in the Exttoxnet, USDA, and NRCS databases. These databases also included acute toxicity information for some other organism groups for many (but not all) pesticides. The OSU (A) and USDA ARS (C) databases did not include toxicity information.

NOTES, continued.

The following table lists the acute toxicity categories used in the PAN database.

Toxicity Category	LC₅₀ (ug/L, micrograms/liter, equivalent to ppb)
Very highly toxic	<100
Highly toxic	100-1,000
Moderately toxic	1,000-10,000
Slightly toxic	10,000-100,000
Not acutely toxic	>100,000

The LC₅₀ is defined as the amount of pesticide present per liter of aqueous solution that is lethal to 50% of the test organisms within the stated study time. Units used are mg or ug of pesticide per liter of solution.

Physical pesticide properties data, including a typical half-life value (days), solubility in water (milligrams per liter), and soil sorption coefficient (Koc) is taken from the tabular OSU (A), USDA ARS (C), and WIN-PST (D) databases. These are linked databases. The WIN-PST database is most comprehensive and up to date. For some pesticides supplementary information on persistence (e.g., half life ranges or half lives in aerobic or anaerobic conditions) is provided, largely from the Exttoxnet Pesticide Profiles (B), and from the PAN database (E) for several pesticides not included in Exttoxnet (B).

The OSU database (A) includes a “pesticide move ment rating” based on half life and sorption coefficient. For a number of pesticides not included in the OSU database, but in the WIN-PST database (D), the rating for this category was based directly on half-life and sorption. The rating is usually the same as the PLP (Pesticide Leaching Potential) category in the WIN-PST database (D).

Information on product names and on which active ingredients are used in a residential setting in Connecticut is from the Connecticut Agricultural Experiment Stations in Windsor and New Haven and the CTDEP Pesticide Division. Only a few of the brand names (often numerous) are provided for a given active ingredient. For some alternative or “organic” products that were not in any database, information was obtained directly from the web sites carrying those products.

NOTES, continued.

The following descriptions of physical parameters accompany the OSU extension pesticide properties database.

The soil half-life is a measure of the persistence of a pesticide in soil. Pesticides can be categorized on the basis of their half-life as non-persistent, degrading to half the original concentration in less than 30 days; moderately persistent, degrading to half the original concentration in 30 to 100 days; or persistent, taking longer than 100 days to degrade to half the original concentration. A "typical soil half-life" value is an approximation and may vary greatly because persistence is sensitive to variations in site, soil, and climate.

The sorption coefficient (Koc) describes the tendency of a pesticide to bind to soil particles. Sorption retards movement, and may also increase persistence because the pesticide is protected from degradation. The higher the Koc, the greater the sorption potential. Koc is derived from laboratory data. Many soil and pesticide factors may influence the actual sorption of a pesticide to soil.

The GUS or Groundwater Ubiquity Score is an empirically derived value that relates pesticide persistence (half-life) and sorption in soil (sorption coefficient, Koc). The GUS may be used to rank pesticides for their potential to move toward groundwater. $GUS = \log_{10}(\text{half-life}) \times [4 - \log_{10}(Koc)]$.

The pesticide movement rating is derived from the GUS. Movement ratings range from extremely low to very high. Pesticides with a GUS less than 0.1 are considered to have an extremely low potential to move toward groundwater. Values of 1.0-2.0 are low, 2.0-3.0 are moderate, 3.0-4.0 are high, and values greater than 4.0 have a very high potential to move toward groundwater.

Water solubility describes the amount of pesticide that will dissolve in a known amount of water. Most of the values reported were determined at room temperature (20 °C or 25 °C). The higher the solubility value the more soluble the pesticide. Highly soluble pesticides are more likely to be removed from the soil by runoff or by moving below the root zone with excess water.