2024 STATUS REPORT
PESTICIDE CONTAMINATION PREVENTION ACT

Annual Report

California Environmental Protection Agency
Department of Pesticide Regulation
Environmental Monitoring Branch

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Report PCPA24

EXECUTIVE SUMMARY

SUMMARY

Food and Agricultural Code (FAC) section 13144(b) requires the Department of Pesticide Regulation (DPR) to annually post the following information to DPR's website:

- A list of pesticide active ingredients (A.I.s) registered for agricultural use with groundwater protection data gaps.
- A list of the pesticide A.I.s on the Groundwater Protection List (GWPL).
- The sales and use information for pesticide A.I.s on the GWPL.

As part of the registration process, DPR obtains environmental fate data for each A.I., which includes information on the mobility and persistence of that pesticide. Pesticides that exceed the specific numerical values (SNVs) established by DPR have a greater potential to contaminate groundwater because they are both mobile and persistent in the environment. If the pesticide, when applied, has the potential to pollute groundwater, then it is placed on the GWPL as per FAC section 13145(d).

The 2024 Status Report lists 105 A.I.s that are on the GWPL. This report includes the mean physical-chemical values (with respect to the SNVs), registration status, current California sales and use data, and mode of action for each listed A.I.

There are no data gaps for the currently registered agricultural pesticides; the data requirements for registration are satisfied.

BACKGROUND

The Pesticide Contamination Prevention Act (PCPA) of 1985 added sections 13141–13152 to the FAC and established a set of data requirements for identifying potential groundwater contaminants. As required by the PCPA, registrants of agricultural use pesticides must provide DPR with data on the environmental fate of the A.I.s in their products. DPR established threshold values, or SNVs, for water solubility, soil adsorption, hydrolysis half-life, aerobic soil metabolism half-life, and anaerobic soil metabolism half-life. SNVs provide a basis for estimating the relative risk of groundwater contamination posed by agricultural use pesticides.

As required by the PCPA (FAC section 13145[d]), DPR established the GWPL (Title 3, California Code of Regulations [3 CCR] section 6800) to identify pesticides that have been detected in groundwater and those that pose a risk to groundwater when applied. 3 CCR section 6800(a) includes pesticides that have been detected in groundwater in California and whose use is regulated to mitigate or prevent further pollution. 3 CCR section 6800(b) includes registered agricultural use pesticides that exceed the SNVs and are applied or injected into the soil or

require flood or furrow irrigation within 72 hours after the application. DPR monitors for pesticides included in 3 CCR section 6800(b) to determine whether they have migrated to groundwater. If any are found to have migrated to groundwater because of agricultural use, the PCPA requires DPR to conduct a formal review to determine if the pesticide's use can continue as currently allowed, with modified use restrictions, or if all uses should be prohibited.

Effective 2015, the PCPA was amended and directs the development of a peer reviewed method, using the SNVs, that estimates a pesticide's potential for groundwater contamination (FAC section 13145[e]). This method, called the multivariate leaching value (MLV) procedure, has undergone scientific peer review and will supersede the process for placing pesticides on the GWPL. The MLV procedure has been submitted for future regulation and is currently pending final regulatory review. The anticipated effective date of the MLVs is July 1, 2026.

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REPORT REQUIREMENTS PURSUANT TO THE PESTICIDE CONTAMINATION PREVENTION ACT

FAC section 13144(b) requires DPR to annually post the following information to the department's website for pesticides registered for agricultural use in California:

1. A list of each pesticide A.I., other specified ingredient, or degradation product of a pesticide A.I. for which there is a groundwater protection data gap.

2. The Groundwater Protection List established pursuant to subdivision (d) of Section 13145 (Table 1).

3. Provide for each pesticide A.I. listed pursuant to number 2, the amount sold in California for the most recent year of available data and where and for what purpose the pesticide was used (Table 2).

The information is presented in two sections:

1. Status of the Groundwater Protection Data Gaps and

2. Physical-Chemical Parameters, Sales, Use, and Mode of Action for Pesticide Active Ingredients on the GWPL, which lists the properties of pesticides identified as potential groundwater pollutants and the SNVs established by DPR.

SECTION 1: STATUS OF THE GROUNDWATER PROTECTION DATA GAPS

In 1985, the PCPA required registrants to submit mobility, persistence, and environmental fate data, as stipulated in FAC section 13143(a), for then-registered agricultural pesticides or face penalties. At that time 147 pesticides were subject to the data call-in. As of 2002, all of those historical data gaps have been filled.

If a registrant of an agricultural use pesticide lacks the data required by the PCPA, they may apply for an interim registration, as stipulated in FAC sections 13161-13170. DPR can defer, for up to three years, the submission of no more than three of the following registration data requirements:

- Efficacy
- Octanol-water partition coefficient (K_{OW})
- Soil photolysis
- Field dissipation
- PCPA study that must be repeated to correct errors or conducted under California conditions or guidelines, providing the weight of evidence from all other submitted data support a scientific judgment in favor of interim registration

Except for efficacy data, the deferral of any of the other data results in a "groundwater protection data gap" as defined in FAC section 13142(f). Currently, there are no interim registrations for agricultural use products and, therefore, no groundwater protection data gaps.

SECTION 2: PHYSICAL-CHEMICAL PARAMETERS, SALES, USE, AND MODE OF ACTION FOR ACTIVE INGREDIENTS EXCEEDING THE SPECIFIC NUMERICAL VALUES

FAC section 13144(a) requires DPR to establish thresholds known as SNVs for water solubility, K_{oc}, hydrolysis half-life, aerobic soil metabolism half-life, anaerobic soil metabolism half-life, and field dissipation half-life. These parameters are correlated with the potential of a pesticide to leach to groundwater; pesticides detected in groundwater tend to be more mobile and persistent than those not detected in groundwater. Water solubility and K_{oc} are considered indicators of the mobility of an A.I. within the soil, while the half-lives for hydrolysis, aerobic and anaerobic soil metabolism, and field dissipation are considered indicators of the persistence of the A.I. in the soil.

Statistical comparison procedures were used to calculate the SNVs. Based on nationwide groundwater studies, a list of pesticide A.I.s was created and separated into two groups: (1) A.I.s that had been detected in groundwater as a result of legal agricultural use (leachers) and (2) A.I.s that had been sampled for and not detected in groundwater as a result of legal agricultural use (non-leachers). Values for the physical-chemical parameters of A.I.s in each group were determined from the open literature and DPR-approved studies submitted by pesticide registrants in fulfillment of the data call-in requirements in FAC section 13143. The

data for each parameter were tested for their usefulness in discriminating between leachers and non-leachers by determining whether the means of the two groups were significantly different. The tests showed that the means of the data for water solubility, hydrolysis half-life, K_{oc}, and the anaerobic soil metabolism half-life for chemicals identified as leachers were significantly different from the means of chemicals identified as non-leachers. The SNVs for these properties were established as those values that would accurately identify as leachers 90 percent of the chemicals detected in groundwater due to agricultural use (Wilkerson and Kim, 1986). The means of the two groups for aerobic soil metabolism, however, were not significantly different. Because the PCPA requires DPR to establish an SNV for each physical-chemical parameter, the SNV for the aerobic soil metabolism half-life was set at a value that minimized its importance in the discrimination procedure. Details on the establishment and subsequent revisions to the SNVs can be found in prior reports (Johnson, 1991; Johnson, 1989; Johnson, 1988). The SNVs currently in regulation (3 CCR section 6804) are:

(a) Water solubility	3 ppm
(b) K_{oc}	1,900 cm^3/g
(c) Hydrolysis half-life	14 days
(d) Aerobic soil metabolism half-life	610 days
(e) Anaerobic soil metabolism half-life	9 days

No values have been established for field dissipation because of insufficient data. In 1989, the SNVs were established by regulation in 3 CCR section 6804 and were last updated in 1993.

DPR typically receives multiple studies for each physical-chemical parameter, which are then averaged together before being compared to their respective SNV. The data included in these studies are evaluated thoroughly and only those that meet certain conditions are included in the average. For solubility, only studies conducted at 20°C are considered. Hydrolysis studies must be carried out between 19°C and 31°C and at a pH between 6.0 and 8.0. These criteria were chosen to reflect ambient, environmental conditions; experiments carried out under extreme temperatures or pH might not be an accurate reflection of a pesticide's fate in the field. Soil adsorption, aerobic soil metabolism, and anaerobic soil metabolism do not have similar requirements.

Currently, A.I.s are placed on the GWPL if they have the potential to pollute groundwater using SNVs for physical and chemical characteristics identified in FAC section 13144(a) and if the following are true about their application method:

- applied to or injected into the soil by ground-based application equipment or by chemigation, or
- the application is followed, within 72 hours, by flood or furrow irrigation

As part of the 2015 PCPA amendment, DPR is reevaluating the procedure for placing A.I.s on the GWPL. DPR developed a more discriminating statistical approach to identify potential leachers. This procedure has been proposed for future regulations and is pending final review.

Table 1. Pesticide active ingredients on the Groundwater Protection List and their respective mean physical-chemical values.

Active Ingredient	Registered (R) or Not Registered (NR)	Solubility (ppm) SNV > 3	K_{oc} (cm^3/g) SNV < 1,900	Aerobic metabolism (days) SNV > 610	Anaerobic metabolism (days) SNV > 9	Hydrolysis (days) SNV > 14
2,4-D, 2-ethylhexyl ester	R	1	46	34	333	1
2,4-D, diethanolamine salt	R	657,000	46	34	333	39[a]
2,4-D, dimethylamine salt	R	657,000	46	34	333	39[a]
2,4-D, isooctyl ester	R	1	46	34	333	1
Acephate	R	818,000	3	3	6	169
Alachlor	NR	200	131	20	5	30[a]
Aldicarb	NR	5,870	239	2	2	28[a]
Aminocyclopyrachlor	R	4,650	32	66	Stable	30[a]
Aminocyclopyrachlor, potassium salt	R	4,650	32	66	Stable	30[a]
Aminopyralid, triisopropanolamine salt	R	205,000	15	204	363	31[a]
Atrazine	R	33	93	146	159	30[a]
Azoxystrobin	R	6	581	112	119	31[a]
Bensulfuron methyl	R	281	332	75	168	103
Bensulide	R	6	16,600	432	1,890	220
Bentazon, sodium salt	R	530	116	40	365	30[a]
Bispyribac-sodium	R	73,000	272	50	101	476
Boscalid	R	5	772	347	303	30[a]
Bromacil	R	929	17	347	73	30[a]
Carbaryl	R	116	375	6	87	12
Chlorantraniliprole	R	1	330	523	184	30
Chloropicrin	R	2,000	25	3	<10	191[a]
Chlorothalonil	R	1	1,790	35	8	49[a]
Chlorsulfuron	R	28,300	35	28	162	1,230
Clomazone	R	1,100	244	66	19	34[a]
Clothianidin	R	259	160	214	27	33[a]
Cycloate	R	95	12,900	43	109	30[a]
Cyprodinil	R	16	1,470	126	183	32[a]
Dazomet	R	3,630	W[b]	1	14	1
Diazinon	R	60	1,580	40	16	138
Dicamba, diglycolamine salt	R	675,000	5	10	88	30[a]

Active Ingredient	Registered (R) or Not Registered (NR)	Solubility (ppm) SNV > 3	K_{oc} (cm^3/g) SNV < 1,900	Aerobic metabolism (days) SNV > 610	Anaerobic metabolism (days) SNV > 9	Hydrolysis (days) SNV > 14
Dicamba, dimethylamine salt	R	675,000	5	10	88	30[a]
Dicamba, sodium salt	R	675,000	5	10	88	30[a]
Dichlobenil	R	21	211	91	1,040	1,810
Dicloran	R	6	804	549	66	72[a]
Dimethenamid-P	R	1,450	223	20	53	30[a]
Dimethoate	R	39,800	11	2	22	68
Dimethomorph	R	12	1,360	75	26	30[a]
Dinotefuran	R	39,800	30	51	77	365
Dithiopyr	R	1	1,040	871	21,700	30[a]
Diuron	R	36	499	372	995	1,290
EPTC	R	345	170	42	65	30[a]
Ethofumesate	R	50	150	93	Stable	2,900
Ethoprop	R	843	161	34	130	449
Fenamidone	R	8	388	7	1,120	411
Flazasulfuron	R	1	168	57	24	17
Fludioxonil	R	2	1,610	102	365	30[a]
Fluopicolide	R	3	337	415	561	330
Flutolanil	R	10	905	852	5,650	30[a]
Fosetyl-al	R	136,000	325	1	2	30[a]
Fosthiazate	R	10	55	34	32	135
Halosulfuron-methyl	R	1,650	124	51	23	14
Hexazinone	R	29,800	642	222	232	56[a]
Imazamox, ammonium salt	R	4,410	58	134	213	30[a]
Imazapyr, isopropylamine salt	R	11,300	348	507	30	30[a]
Imazethapyr, ammonium salt	R	351	54	2,410	568	30[a]
Imidacloprid	R	514	262	997	27	30[a]
Indaziflam	R	3	496	99	180	30[a]
Iprodione	R	12	W	64	32	5
Isoxaben	R	2	351	205	30	1,270
Linuron	R	77	341	22	102	262
Malathion	R	125	291	3	30	6

Active Ingredient	Registered (R) or Not Registered (NR)	Solubility (ppm) SNV > 3	K_{oc} (cm^3/g) SNV < 1,900	Aerobic metabolism (days) SNV > 610	Anaerobic metabolism (days) SNV > 9	Hydrolysis (days) SNV > 14
Mefenoxam (Metalaxyl-M)	R	26,000	163	60	W	1,000
Mesotrione	R	9,840	56	18	7	30[a]
Metalaxyl	R	8,410	163	62	68	1,000
Metaldehyde	R	190	35	67	223	6,150
Metconazole	R	30	1710	639	120	33
Methiocarb	R	27	655	64	64	24
Methomyl	R	54,700	43	46	1	30[a]
Metolachlor	R	493	190	26	61	200
Metribuzin	R	1,030	106	140	276	4,760
Myclobutanil	R	164	518	66	62	30[a]
Napropamide	R	74	726	455	51	35[a]
Nitrapyrin	R	72	333	30	59	8
Norflurazon	R	34	617	172	348	2,650
Orthosulfamuron	R	629	538	25	58	24
Oryzalin	R	3	807	63	10	28[a]
Penoxsulam	R	470	119	57	8	30[a]
Phorate	R	29	543	3	14	3
Prometon	NR	715	124	459	61	1,130
Prometryn	R	33	277	274	316	28[a]
Propamocarb hydrochloride	R	101,000	619	77	92	30[a]
Propanil	R	152	518	2	3	5,000
Propiconazole	R	100	656	72	211	30[a]
Propyzamide	R	13	889	392	762	42[a]
Prothioconazole	R	768	1760	1	71	30[a]
Pyraclostrobin	R	2	9,300	136	3	30[a]
Pyrazon	NR	380	13,800	124	489	30[a]
Rimsulfuron	R	3,750	49	21	18	7
S-metolachlor	R	480	185	38	61	200
Siduron	NR	22	201	895	3,770	30[a]
Simazine	R	6	340	110	71	28[a]
Sulfentrazone	R	400	169	331	3,300	291

Active Ingredient	Registered (R) or Not Registered (NR)	Solubility (ppm) SNV > 3	K_{oc} (cm^3/g) SNV < 1,900	Aerobic metabolism (days) SNV > 610	Anaerobic metabolism (days) SNV > 9	Hydrolysis (days) SNV > 14
Sulfometuron-methyl	R	4,250	89	52	116	30[a]
Tebuconazole	R	32	1,000	597	1,260	28[a]
Tebuthiuron	R	2,600	90	1,220	1,520	395[a]
Thiamethoxam	R	4,100	64	229	19	6,080
Thiencarbazone-methyl	R	342	100	36	60	146
Thiobencarb	R	28	530	37	306	160[a]
Thiophanate-methyl	R	25	225	1	2	41
Triadimefon	R	64	365	6	23	1,760
Triallate	R	3	60	47	20	1,170
Triclopyr, butoxyethyl ester	R	7	62	13	27	7
Triclopyr, triethylamine salt	R	234,000	62	13	1,600	274[a]
Triflumizole	R	18	1,240	23	67	116
Triticonazole	R	8	523	220	235	30[a]

[a] No degradation occurred during the study. The half-life is greater than the value listed, which is the length of the study.
[b] Study has been waived.

Table 2. Pesticide sales and use reported during 2023 for pesticide active ingredients on the Groundwater Protection List and a description of their use (DPR, 2025a; DPR, 2025b; Meister, 2012; Tomlin, 2003).

Active Ingredient (A.I.)	Registered (R) or Not Registered (NR)	2023 Pounds A.I. Sold	2023 Pounds A.I. Applied	Use	Description
2,4-D, 2-ethylhexyl ester	R	16,312	22,695	Herbicide	Selective, systemic
2,4-D, diethanolamine salt	R	2,811	1,857	Herbicide	Selective, systemic
2,4-D, dimethylamine salt	R	497,313	286,708	Herbicide	Selective, systemic
2,4-D, isooctyl ester	R	17,547	317	Herbicide	Selective, systemic
Acephate	R	229,169	138,111	Insecticide	Contact, systemic
Alachlor	NR	0	9	Herbicide	Pre-emergent
Aldicarb	NR	0	0	Insecticide	Broad spectrum
Aminocyclopyrachlor	R	0	261	Herbicide	Selective, systemic
Aminocyclopyrachlor, potassium salt	R	2,998	7,072	Herbicide	Selective, systemic
Aminopyralid, triisopropanolamine salt	R	88,045	38,677	Herbicide	Broadleaf control
Atrazine	R	26,185	16,966	Herbicide	Selective, residual
Azoxystrobin	R	181,765	321,285	Fungicide	Foliar
Bensulfuron methyl	R	0	866	Herbicide	Selective
Bensulide	R	410,334	373,170	Herbicide	Selective, pre-emergent
Bentazon, sodium salt	R	44	7,378	Herbicide	Selective, pre-emergent
Bispyribac-sodium	R	8,220	4,653	Herbicide	Selective, post-emergent
Boscalid	R	154,232	110,752	Fungicide	Broad spectrum
Bromacil	R	2,781	2,199	Herbicide	Pre-emergent
Carbaryl	R	118,725	84,492	Insecticide	Broad spectrum
Chlorantraniliprole	R	37,034	170,488	Insecticide	Soil, foliar
Chloropicrin	R	4,576,962	8,515,832	Fumigant	Space, commodity, soil
Chlorothalonil	R	416,811	1,196,731	Fungicide	Broad spectrum, protectant
Chlorsulfuron	R	1	7,633	Herbicide	Selective
Clomazone	R	2,051	42,451	Herbicide	Broad spectrum, pre-emergent
Clothianidin	R	14,460	20,362	Insecticide	Systemic
Cycloate	R	36,029	40,321	Herbicide	Selective, preplant
Cyprodinil	R	58,870	152,567	Fungicide	Systemic
Dazomet	R	63,420	11,078	Fumigant	Preplant

Active Ingredient (A.I.)	Registered (R) or Not Registered (NR)	2023 Pounds A.I. Sold	2023 Pounds A.I. Applied	Use	Description
Diazinon	R	50,891	39,932	Insecticide/nematicide	Soil/foliar/seed
Dicamba, diglycolamine salt	R	75,655	48,967	Herbicide	Selective, systemic
Dicamba, dimethylamine salt	R	25,341	5,182	Herbicide	Selective, systemic
Dicamba, sodium salt	R	7,694	3,944	Herbicide	Selective, systemic
Dichlobenil	R	21,777	76,345	Herbicide	Selective, cellulose
Dicloran	R	16,075	9,815	Fungicide	Pre/post-harvest
Dimethenamid-P	R	11,374	11,523	Herbicide	Selective, pre-emergent
Dimethoate	R	65,836	111,215	Insecticide/acaricide	Systemic
Dimethomorph	R	25,247	21,399	Fungicide	Selective, post-emergent
Dinotefuran	R	42,847	96,097	Insecticide	Selective, systemic
Dithiopyr	R	206,726	80,960	Herbicide	Pre/post-emergent
Diuron	R	247,582	60,490	Herbicide	Selective, general
EPTC	R	227,292	140,806	Herbicide	Selective
Ethofumesate	R	4,280	11,838	Herbicide	Selective
Ethoprop	R	9,762	13,006	Insecticide/nematicide	Soil
Fenamidone	R	520	17,657	Fungicide	Broad spectrum, foliar, soil
Flazasulfuron	R	308	1,364	Herbicide	Systemic, pre/post-emergent
Fludioxonil	R	24,888	69,130	Fungicide	Contact
Fluopicolide	R	14,980	4,014	Fungicide	Foliar, soil
Flutolanil	R	34	3,713	Fungicide	Systemic
Fosetyl-AL, technical	R	66,319	148,776	Fungicide	Systemic, preventative
Fosthiazate	R	0	0	Nematicide	Systemic
Halosulfuron-methyl	R	66,268	13,743	Herbicide	Pre/post-emergent
Hexazinone	R	1,697	55,494	Herbicide	Contact, residual
Imazamox, ammonium salt	R	5,475	9,505	Herbicide	Selective, post-emergent
Imazapyr, isopropylamine salt	R	90,313	47,127	Herbicide	Broad-spectrum, systemic
Imazethapyr, ammonium salt	R	6,295	6,469	Herbicide	Selective, pre/post-emergent
Imidacloprid	R	406,974	293,143	Insecticide	Systemic
Indaziflam	R	44,030	40,281	Herbicide	Soil, pre-emergent
Iprodione	R	38,154	42,389	Fungicide	Contact

Active Ingredient (A.I.)	Registered (R) or Not Registered (NR)	2023 Pounds A.I. Sold	2023 Pounds A.I. Applied	Use	Description
Isoxaben	R	71,038	25,285	Herbicide	Soil, pre-emergent
Linuron	R	49,742	43,421	Herbicide	Selective
Malathion	R	417,940	272,965	Insecticide	Nonsystemic foliar
Mefenoxam	R	44,104	84,935	Fungicide	Seed treatment, soil, foliar
Mesotrione	R	3,003	20,349	Herbicide	Foliar, pre/post-emergent
Metalaxyl	R	528	5,466	Fungicide	Seed treatment, soil, foliar
Metaldehyde	R	49,126	42,289	Molluscicide	Contact
Metconazole	R	36,772	32,543	Fungicide	Systemic
Methiocarb	R	0	323	Insecticide/acaricide	Nonsystemic
Methomyl	R	1,361	193,292	Insecticide	Broad spectrum
Metolachlor	R	11,189	11,844	Herbicide	Selective, pre-emergent
Metribuzin	R	21,649	45,130	Herbicide	Selective, systemic
Myclobutanil	R	20,133	33,038	Fungicide	Systemic, broad spectrum
Napropamide	R	21,444	16,288	Herbicide	Selective, pre-emergent
Nitrapyrin	R	0	13	Nitrification inhibitor	Selective
Norflurazon	R	0	3,233	Herbicide	Selective, preplant
Orthosulfamuron	R	0	14,392	Herbicide	Selective, post-emergent
Oryzalin	R	42	7,943	Herbicide	Selective, pre-emergent
Penoxsulam	R	17,121	6,140	Herbicide	Post-emergent
Phorate	R	6,048	3,452	Insecticide	Systemic, soil
Prometon	NR	9	0	Herbicide	Pre/post-emergent
Prometryn	R	19,899	43,751	Herbicide	Selective, pre/post-emergent
Propamocarb hydrochloride	R	73,424	64,711	Fungicide	Selective
Propanil	R	31,306	2,489,585	Herbicide	Contact, post-emergent
Propiconazole	R	85,417	110,008	Fungicide	Foliar
Propyzamide	R	543,020	114,906	Herbicide	Pre-, post-emergent
Prothioconazole	R	161	3	Fungicide	Foliar, soil, seed treatment
Pyraclostrobin	R	176,341	130,053	Fungicide	Foliar, respiration inhibitor
Pyrazon	NR	0	0	Herbicide	Pre/early post-emergent
Rimsulfuron	R	269	41,450	Herbicide	Selective, systemic

Active Ingredient (A.I.)	Registered (R) or Not Registered (NR)	2023 Pounds A.I. Sold	2023 Pounds A.I. Applied	Use	Description
S-metolachlor	R	267,335	335,779	Herbicide	Selective, preplant
Siduron	NR	0	94	Herbicide	Selective, pre-emergent
Simazine	R	61,866	40,362	Herbicide	Selective
Sulfentrazone	R	21,829	2,966	Herbicide	Selective, pre/post-emergent
Sulfometuron-methyl	R	3,308	10,184	Herbicide	Contact, residual
Tebuconazole	R	93,479	118,391	Fungicide	Systemic
Tebuthiuron	R	7,403	6,456	Herbicide	Nonselective
Thiamethoxam	R	43,042	57,868	Insecticide	Systemic
Thiencarbazone-methyl	R	0	35	Herbicide	Selective, post-emergent
Thiobencarb	R	404,010	465,525	Herbicide	Pre/post-emergent
Thiophanate-methyl	R	114,824	204,272	Fungicide	Systemic, broad spectrum
Triadimefon	R	8	1,335	Fungicide	Systemic
Triallate	R	800	871	Herbicide	Selective, pre-emergent
Triclopyr, butoxyethyl ester	R	402,910	55,123	Herbicide	Systemic, post-emergent
Triclopyr, triethylamine salt	R	608,204	166,711	Herbicide	Systemic, post-emergent
Triflumizole	R	154	16,244	Fungicide	Systemic, broad spectrum
Triticonazole	R	162	113	Fungicide	Systemic, broad spectrum
Total	105	12,497,173	18,398,394		

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