

FACT SHEET



PESTICIDE DRINKING WATER STANDARDS

Groundwater Protection Program, Data Sources Checked July 2021

This fact sheet contains information about drinking water standards for pesticides or degradates that the California Department of Pesticide Regulation's (CDPR) Groundwater Protection Program actively samples for or has sampled for in the past. Each of the columns in the fact sheet table is described below. Agencies referenced in this fact sheet are the California State Water Resources Control Board (SWRCB), California Office of Environmental Health Hazard Assessment (OEHHA), United States Environmental Protection Agency (USEPA), the United States Geological Survey (USGS), and CDPR. All values are reported in units of parts per billion (ppb), or about one drop of water in a swimming pool. Values that are not established are denoted as "—". Data sources are noted by superscripts.

Pesticide: The name of the pesticide or degradate.

MCL [ppb] SWRCB¹: The Maximum Contaminant Level (MCL) is an enforceable, health protective drinking water level adopted by the state of California which takes into account not only a chemicals' health risks but also factors such as their detectability and treatability, as well as costs of treatment.

PHG [ppb] OEHHA¹: Public Health Goals (PHGs), established by the state of California, are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods.

PHC [ppb] OEHHA²: Public Health Concentration (PHCs), determined by the state of California, are concentrations of a chemical in drinking water that is not expected to pose a significant risk to health when consumed over a lifetime, and is developed using approaches and methods of OEHHA's Public Health Goal Program. If differentiated, CE refers to a PHC derived for cancer effects and NCE refers to a PHC derived for non-cancer effects.

HHA Limit for Concern [ppb] CDPR³: The HHA Limit for Concern is the concentration identified by CDPR's Human Health Assessment Branch at which the human health concerns will be re-evaluated.

MCL [ppb] USEPA^{1,4}: The Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are federally enforceable standards.

MCLG [ppb] USEPA^{1,5}: The Maximum Contaminant Level Goal (MCLG) is a non-enforceable, federal health benchmark goal that is set at a level at which no known or anticipated adverse effect on the health of persons is expected to occur and which allows an adequate margin of safety.

Chronic or Lifetime HHBP [ppb] USEPA⁶: USEPA Chronic or Lifetime Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values in drinking water protective of chronic non-carcinogenic effects over a lifetime of exposure, assuming that 20% of the exposure to a given pesticide is from water and additional exposure is derived from another source such as food, air, or dermal contact.

Acute or One-Day HHBP [ppb] USEPA⁶: USEPA Acute or One-day Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values in drinking water protective of acute or up to one-day non-carcinogenic effects, assuming that the entire exposure to a given pesticide is from drinking water.

Carcinogenic HHBP (E-6 to E-4) [ppb] USEPA⁶: USEPA Carcinogenic Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values protective of cancer effects. The HHBP range represents a one-in-one million (10^{-6}) to one-in-ten thousand (10^{-4}) cancer risk range.

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One-Day HA [ppb] USEPA⁵: The One-Day Health Advisory (HA) is the concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for up to one day of exposure (for a 10-kg child consuming 1 L of water/day).

Ten-Day HA [ppb] USEPA⁵: The Ten-Day Health Advisory (HA) concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for up to ten days of exposure (for a 10-kg child consuming 1L of water/day).

DWEL HA [ppb] USEPA⁵: A Drinking Water Equivalent Level (DWEL) is a lifetime exposure level, assuming 100% exposure from drinking water, at or below which adverse, non-carcinogenic health effects would not be expected to occur.

Lifetime HA [ppb] USEPA⁵: The Lifetime Health Advisory (HA) is the concentration in drinking water at or below which no adverse non-carcinogenic effects are expected for a lifetime of exposure (for a 70kg adult drinking 2L of water/day). The lifetime HA incorporates a drinking water risk concentration factor or a default of 20% of total exposure from all sources.

Non-Cancer HBSL [ppb] USGS⁴: USGS Non-cancer Health-Based Screening Levels (HBSLs) are non-enforceable benchmarks of concentration protective of chronic non-cancer effects.

Cancer HBSL (E-6 to E-4) [ppb] USGS⁴: USGS Cancer Health-Based Screening Levels (HBSLs) are non-enforceable benchmarks protective of cancer effects. The HBSL concentration range represents a one-in-one million (10^{-6}) to one-in-ten thousand (10^{-4}) cancer risk range.

Data Sources:

¹<https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/mclreview/mcls_dlrs_phgs.pdf>

²<<https://oehha.ca.gov/pesticides/pesticides-reports-notice-and-documents>>

³<<https://www.cdpr.ca.gov/docs/hha/memos.htm>>

⁴<<https://water.usgs.gov/water-resources/hbsl/>>

⁵<<https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>>

⁶<[https://iaspub.epa.gov/apex/pesticides/f?p=HHBP:home:17207854062786:::~:](https://iaspub.epa.gov/apex/pesticides/f?p=HHBP:home:17207854062786:::)>

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Pesticide or Degradate	MCL [ppb] SWRCB	PHG [ppb] OEHHA	PHC [ppb] OEHHA	HHA Limit for Concern [ppb] CDPR	MCL [ppb] USEPA	MCLG [ppb] USEPA	Chronic or Lifetime HHBP [ppb] USEPA	Acute or One-Day HHBP [ppb] USEPA	Carcinogenic HHBP (E-6 to E-4) [ppb] USEPA	One-Day HA [ppb] USEPA	Ten-Day HA [ppb] USEPA	DWEL HA [ppb] USEPA	Lifetime HA [ppb] USEPA	Non-Cancer HBSL [ppb] USGS	Cancer HBSL (E-6 to E-4) [ppb] USGS
2,4-D	70	20	—	—	70	70	200	20000	—	1000	300	200	—	—	—
abamectin	—	—	—	—	—	—	3	30	—	—	—	—	—	—	—
ACET	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
acetamiprid	—	—	—	—	—	—	450	700	—	—	—	—	—	—	—
alachlor	2	4	—	—	2	0	—	—	—	100	100	400	—	—	—
AMPA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
atrazine	1	0.15	—	—	3	3	—	—	—	—	—	700	—	—	—
azinphos-methyl	—	—	—	—	—	—	9.6	20	—	—	—	—	—	—	—
azoxystrobin	—	—	—	—	—	—	1200	4500	—	—	—	—	—	—	—
bensulfuron methyl	—	—	—	—	—	—	1000	—	—	—	—	—	—	—	—
bensulide	—	—	—	—	—	—	30	1000	—	—	—	—	—	—	—
bentazon	18	200	—	—	—	—	—	—	—	300	300	1000	200	1000	—
bispyribac-sodium	—	—	—	—	—	—	600	—	—	—	—	—	—	—	—
boscalid	—	—	—	—	—	—	1400	—	—	—	—	—	—	—	—
bromacil	—	—	—	—	—	—	—	—	—	5000	5000	3500	70	100	—
carbaryl	—	—	—	—	—	—	—	—	—	1000	1000	400	—	—	40-4000
carbofuran	18	0.7	—	—	40	40	—	—	—	—	—	—	—	—	—
chlorantraniliprole	—	—	—	—	—	—	10100	—	—	—	—	—	—	—	—
chlorothalonil	—	—	—	—	—	—	—	—	—	200	200	500	—	100	—
chlorpyrifos	—	—	—	—	—	—	1.8	2.2	—	30	30	10	2	2	—
chlorsulfuron	—	—	—	—	—	—	300	—	—	—	—	—	—	—	—
clomazone	—	—	—	—	—	—	5400	30000	—	—	—	—	—	—	—
clothianidin	—	—	—	—	—	—	630	1700	—	—	—	—	—	—	—
cyanazine	—	—	—	—	—	—	—	—	—	100	100	—	70	10	0.03-3
cyantraniliprole	—	—	—	—	—	—	60	—	—	—	—	—	—	—	—
cyprodinil	—	—	—	—	—	—	170	10000	—	—	—	—	—	—	—
DACT	—	—	—	—	—	—	12	300	—	—	—	—	—	—	—
DCPA	—	—	2 (CE) 7 (NCE)	70	—	—	—	—	—	2000	2000	350	70	60	20-2000
DDVP	—	—	—	—	—	—	3	50	—	—	—	—	—	—	—
DEA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
desulfinyl fipronil	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
desulfinyl fipronil amide	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
diazinon	—	—	—	—	—	—	—	—	—	20	20	7	1	2	—
dicamba	—	—	—	—	—	—	—	—	—	—	—	18000	4000	300	—
dichlobenil	—	—	—	—	—	—	60	1200	—	—	—	—	—	—	—
dichloran	—	—	—	—	—	—	16	1000	—	—	—	—	—	—	—

FACT SHEET

PESTICIDE DRINKING WATER STANDARDS

Groundwater Protection Program, Data Sources Checked July 2021



Pesticide or Degradate	MCL [ppb] SWRCB	PHG [ppb] OEHHA	PHC [ppb] OEHHA	HHA Limit for Concern [ppb] CDPR	MCL [ppb] USEPA	MCLG [ppb] USEPA	Chronic or Lifetime HHBP [ppb] USEPA	Acute or One-Day HHBP [ppb] USEPA	Carcinogenic HHBP (E-6 to E-4) [ppb] USEPA	One-Day HA [ppb] USEPA	Ten-Day HA [ppb] USEPA	DWEL HA [ppb] USEPA	Lifetime HA [ppb] USEPA	Non-Cancer HBSL [ppb] USGS	Cancer HBSL (E-6 to E-4) [ppb] USGS
3,4-dichloroaniline	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
diflubenzuron	—	—	—	—	—	—	100	—	—	—	—	—	—	—	—
dimethenamid	—	—	—	—	—	—	300	10000	—	—	—	—	—	—	—
dimethoate	—	—	—	—	—	—	14	87	—	—	—	—	—	—	—
dinotefuran	—	—	—	—	—	—	6000	8330	—	—	—	—	—	—	—
disulfoton	—	—	—	—	—	—	—	—	—	10	10	3.5	0.7	0.8	—
dithiopyr	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
diuron	—	—	—	—	—	—	—	—	—	1000	1000	100	—	20	2-200
DSMN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ethofumesate	—	—	—	—	—	—	2000	8000	—	—	—	—	—	—	—
ethoprophos	—	—	—	—	—	—	9	51	1.14-114	—	—	—	—	—	—
ethyl parathion	—	—	—	—	—	—	0.2	2	—	—	—	—	—	—	—
etofenprox	—	—	—	—	—	—	240	—	—	—	—	—	—	—	—
fenamidone	—	—	—	—	—	—	181	8330	—	—	—	—	—	—	—
fenamiphos	—	—	—	—	—	—	—	—	—	9	9	3.5	0.7	0.6	—
fenhexamid	—	—	—	—	—	—	1100	—	—	—	—	—	—	—	—
fipronil	—	—	—	—	—	—	1	170	—	—	—	—	—	—	—
fipronil amide	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
fipronil sulfide	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
fipronil sulfone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
fludioxonil	—	—	—	331	—	—	200	30000	—	—	—	—	—	—	—
flupyradifurone	—	—	—	—	—	—	500	2300	—	—	—	—	—	—	—
flutriafol	—	—	—	—	—	—	300	2100	—	—	—	—	—	—	—
fonofos	—	—	—	—	—	—	—	—	—	20	20	70	10	10	—
glufosinate	—	—	—	—	—	—	—	—	—	—	—	—	—	40	—
glyphosate	700	900	—	—	700	700	—	—	—	20000	20000	70000	—	—	—
halosulfuron-methyl	—	—	—	—	—	—	600	10000	—	—	—	—	—	—	—
hexazinone	—	—	—	—	—	—	—	—	—	3000	2000	2000	400	300	—
imidacloprid	—	—	—	283	—	—	360	930	—	—	—	—	—	—	—
imidacloprid olefin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
imidacloprid urea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
imidacloprid guanidine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
imidacloprid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
olfenic guanidine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
indoxacarb	—	—	—	—	—	—	100	800	—	—	—	—	—	—	—
isoxaben	—	—	—	—	—	—	300	—	—	—	—	—	—	—	—
kresoxim-methyl	—	—	—	—	—	—	2300	—	11-1100	—	—	—	—	—	—
linuron	—	—	—	—	—	—	49	3300	—	—	—	—	—	—	—

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malathion	—	—	—	—	—	—	—	—	—	200	200	2000	500	60	—
MCPA	—	—	—	—	—	—	—	—	—	100	100	140	30	30	—
mefenoxam/metalaxyl	—	—	—	—	—	—	474	—	—	—	—	—	—	—	—
methidathion	—	—	—	—	—	—	9.6	10	—	—	—	—	—	—	—
methiocarb	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
methomyl	—	—	—	—	—	—	—	—	—	300	300	900	200	50	—
methoxyfenozide	—	—	—	—	—	—	600	—	—	—	—	—	—	—	—
methyl parathion	—	—	—	—	—	—	—	—	—	300	300	7	1	—	—
metolachlor	—	—	7	—	—	—	—	—	—	2000	2000	3500	700	600	—
metolachlor ESA	—	—	1300	—	—	—	—	—	—	—	—	—	—	—	—
metolachlor OXA	—	—	3200	—	—	—	—	—	—	—	—	—	—	—	—
metribuzin	—	—	—	—	—	—	—	—	—	5000	5000	350	70	8	—
molinate	20	1	—	—	—	—	—	—	—	—	—	—	—	0.6	—
MTP	—	—	2500	—	—	—	—	—	—	—	—	—	—	—	—
napropamide	—	—	—	—	—	—	770	—	—	—	—	—	—	—	—
norflurazon	—	—	—	—	—	—	96	800	—	—	—	—	—	—	—
orthosulfamuron	—	—	—	—	—	—	300	—	—	—	—	—	—	—	—
oryzalin	—	—	—	—	—	—	900	6900	4.11-411	—	—	—	—	—	—
oxadiazon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
penoxsulam	—	—	—	1285 (acute) 502 (chronic)	—	—	941	—	—	—	—	—	—	—	—
phorate	—	—	—	—	—	—	1.1	5	—	—	—	—	—	—	—
piperonyl butoxide	—	—	—	—	—	—	992	42000	—	—	—	—	—	—	—
prometon	—	—	—	—	—	—	—	—	—	200	200	2000	400	300	—
prometryn	—	—	—	—	—	—	300	3300	—	—	—	—	—	—	—
propanil	—	—	—	—	—	—	60	—	—	—	—	—	—	—	—
propargite	—	—	—	—	—	—	300	2000	0.16-16.7	—	—	—	—	—	—
propiconazole	—	—	—	—	—	—	600	2000	—	—	—	—	—	—	—
propramide	—	—	—	—	—	—	300	300	—	—	—	—	—	—	—
pyraclostrobin	—	—	—	—	—	—	220	1000	—	—	—	—	—	—	—
pyriproxyfen	—	—	—	—	—	—	2200	—	—	—	—	—	—	—	—
quinoxifen	—	—	—	—	—	—	1000	—	—	—	—	—	—	—	—
simazine	4	4	—	—	4	4	—	—	—	—	—	700	—	—	—
sulfentrazone	—	—	—	—	—	—	900	3900	—	—	—	—	—	—	—
sulfentrazone-3-carboxylic acid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
sulfoxaflor	—	—	—	—	—	—	300	2000	—	—	—	—	—	—	—
tebuconazole	—	—	—	—	—	—	190	190	—	—	—	—	—	—	—

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tebufenozide	—	—	—	—	—	—	120	—	—	—	—	—	—	—	—
tebuthiuron	—	—	—	—	—	—	—	—	—	3000	3000	2000	500	900	—
thiacloprid	—	—	—	—	—	—	30	70	0.78-78.8	—	—	—	—	—	—
thiamethoxam	—	—	—	—	—	—	77	2300	—	—	—	—	—	—	—
thiobencarb	70	42	—	—	—	—	60	7000	—	—	—	—	—	—	—
TPA	—	—	2500	70	—	—	17500	—	—	—	125000	—	—	—	—
triallate	—	—	—	—	—	—	160	1000	0.446-44.6	—	—	—	—	—	—
triclopyr	—	—	—	—	—	—	300	1000	—	—	—	—	—	—	—
trifloxystrobin	—	—	—	—	—	—	240	69000	—	—	—	—	—	—	—
uniconazole	—	—	—	—	—	—	100	1000	—	—	—	—	—	—	—