

ARTICLE 5.5. PRIMARY STANDARDS -- ORGANIC CHEMICALS

Section 64444. General requirements

The MCLs for the primary drinking water chemicals shown in Table 64444-A shall not be exceeded in the water supplied to the public.

Table 64444-A
Maximum Contaminant Levels
Organic Chemicals

<i>Chemical</i>	<i>Maximum Contaminant Level, mg/L</i>
<i>(a) Volatile Organic Chemicals (VOCs)</i>	
Benzene.	0.001
Carbon Tetrachloride	0.0005
1,2-Dichlorobenzene.	0.6
1,4-Dichlorobenzene.	0.005
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane.	0.005
1,2-Dichloropropane.	0.005
1,3-Dichloropropene.	0.0005
Ethylbenzene.	0.7
<u>Methyl-tert-butyl ether</u>	<u>0.013</u>
Monochlorobenzene.	0.07
Styrene.	0.1
1,1,2,2-Tetrachloroethane.	0.001
Tetrachloroethylene.	0.005
Toluene.	0.15
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane.	0.200
1,1,2-Trichloroethane.	0.005
Trichloroethylene.	0.005
Trichlorofluoromethane.	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane.	1.2
Vinyl Chloride.	0.0005
Xylenes.	1.750*
///	

Table 64444-A (continued)
 Maximum Contaminant Levels
 Organic Chemicals

<i>Chemical</i>	<i>Maximum Contaminant Level, mg/L</i>
(b) Non-Volatile Synthetic Organic Chemicals (SOCs)	
Alachlor.	0.002
Atrazine.	0.003
Bentazon.	0.018
Benzo(a)pyrene.	0.0002
Carbofuran.	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane.	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.004
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin.	0.002
Ethylene Dibromide	0.00005
Glyphosate.	0.7
Heptachlor.	0.00001
Heptachlor Epoxide.	0.00001
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane.	0.0002
Methoxychlor	0.04
Molinate	0.02
Oxamyl	0.2
Pentachlorophenol.	0.001
Picloram	0.5
Polychlorinated Biphenyls.	0.0005
Simazine	0.004
Thiobencarb.	0.07
Toxaphene.	0.003
2,3,7,8-TCDD (Dioxin).	3 x 10 ⁻⁸
2,4,5-TP (Silvex).	0.05

*MCL is for either a single isomer or the sum of the isomers.

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Note: Authority cited: Sections ~~208, 4021 and 4023.1~~ 100275, 116350 and 116365, Health and Safety Code. Reference: Section ~~4017, 4023.1 and 4024~~ 116365, 116385 and 116555, Health and Safety Code.

Section 64445. Initial sampling - organic chemicals

(a) Each community and nontransient-noncommunity water system shall collect four quarterly samples during the year designated by the Department of each compliance period beginning with the compliance period starting January 1, 1993, from each water source at a site prior to any treatment and test for all applicable organic chemicals listed in Table 64444-A. The Department will designate the year based on historical monitoring frequency and laboratory capacity. For surface sources, the samples shall be taken at each water intake. For groundwater sources, the samples shall be taken at each well head. Where multiple intakes or wells draw from the same water supply, the Department will consider sampling of representative sources as a means of complying with this section. Selection of representative sources shall be based on evidence which includes a hydrogeological survey and sampling results. Wells shall be allowed to flow for a minimum of 15 minutes before sampling to insure that the samples reflect the water quality of the source. In place of water source samples, a supplier may collect samples at sites located at the entry points to the distribution system. The samples shall be representative of each source after treatment. The system shall collect each sample at the same sampling site, unless a change is approved by the Department.

(b) For any organic chemical added to Table 64444-A, the water system shall initiate the quarterly monitoring for that chemical in January of the calendar year after the effective date of the MCL.

(c) A water system may request approval from the Department to composite samples from up to five sampling sites, provided that the number of the sites to be composite is less than the ratio of the MCL to the DLR in Section 64445.1. Approval will be based on a review of three years of historical data, well construction and aquifer information for groundwater, and intake location, similarity of sources, and watershed characteristics for surface water. Compositing shall be done in the laboratory and analyses shall be conducted within 14 days of sample collection.

(1) Systems serving more than 3,300 persons shall composite only from sampling sites within a single system. Systems serving 3,300 persons or less may composite among different systems up to the 5-sample limit.

(2) If any organic chemical is detected in the composite sample, a follow-up sample shall be analyzed within 14 days from each sampling site included in the composite for the contaminants which were detected. The water supplier shall report the results to the Department within 14 days of the follow-up sample collection. If available, duplicates of the original sample taken from each sampling site used in the composite may be used instead of resampling.

(d) A water system may apply to the Department for a monitoring waiver for one or more of the organic chemicals on Table 64444-A in accordance with the following:

(1) A source may be eligible for a waiver if it can be documented that the chemical has not been previously used, manufactured, transported, stored, or disposed of within the watershed or zone of influence and therefore, that the source can be designated

nonvulnerable.

(2) If previous use of the chemical locally is unknown or the chemical is known to have been used previously and the source cannot be designated nonvulnerable pursuant to Paragraph (d)(1), it may still be eligible for a waiver based on a review related to susceptibility to contamination. The application to the Department for a waiver based on susceptibility shall include the following:

- (A) Previous monitoring results;
- (B) user population characteristics;
- (C) proximity to sources of contamination;
- (D) surrounding land uses;
- (E) degree of protection of the water source;
- (F) environmental persistence and transport of the chemical in water,
soil and air;
- (G) elevated nitrate levels at the water supply source; and
- (H) historical system operation and maintenance data including
previous Departmental inspection results.

(3) To apply for a monitoring waiver for VOCs, the water system shall have completed the initial four quarters of monitoring pursuant to subsection (a) ~~or (g)~~ or three consecutive years of monitoring with no VOCs detected. If granted a waiver for VOC monitoring, a system using groundwater shall collect a minimum of one sample from every sampling site every six years and a system using surface water shall not be required to monitor for the term of the waiver. The term of a VOC waiver shall not exceed three years.

(4) To obtain a monitoring waiver for one or more of the SOC(s), the water system may apply before doing the initial round of monitoring or shall have completed three consecutive years of annual monitoring with no detection of the SOC(s) listed. If the system is granted a waiver for monitoring for one or more SOC(s), no monitoring for the waived SOC(s) shall be required for the term of the waiver, which shall not exceed three years.

(e) For water sources designated by a water supplier as standby sources, the water supplier shall sample each source for any organic chemical added to Table 64444-A once ~~within one year~~ of the three-year period beginning in January of the calendar year after the effective date of the MCL.

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(f) Water quality data collected prior to January 1, 1988, for VOCs, or January 1, 1990, for SOCs, and/or data collected in a manner inconsistent with this section shall not be used in the determination of compliance with the monitoring requirements for organic chemicals.

(g) Data (i.e., a single sample) collected in a manner consistent with this section after January 1, 1998 in which no MTBE is detected, along with a designation of nonvulnerability pursuant to subsection(d). ~~January 1, 1988, for VOCs, or January 1, 1990, for SOCs, and prior to January 1, 1993,~~ may be used to satisfy the initial monitoring requirements in subsection (a). If the requirements are satisfied in this way by a water system, ~~and no chemical is detected,~~ the system shall begin annual monitoring pursuant to Section 64445.1(b)(1) ~~for VOCs or Section 64445.1(b)(2) or (3) for SOCs.~~

(h) Water quality data collected in compliance with the monitoring requirements of this section by a wholesaler agency providing water to a public water system shall be acceptable for use by that system for compliance with the monitoring requirements of this section.

Note: Authority cited: Sections ~~208 and 4023.3~~ 100275 and 116375, Health and Safety Code.
Reference: Sections ~~4017 and 4024~~ 116385 and 116555, Health and Safety Code.

Section 64445.1. Repeat sampling

(a) For the purposes of this article, detection shall be defined by the detection limits for purposes of reporting (DLRs) in Table 64445.1-A:

Table 64445.1-A
 Detection Limits for Purposes of Reporting (DLRs)
 for Regulated Organic Chemicals

<i>Chemical</i>	<i>Detection Limit for Purposes of Reporting (DLR)(mg/L)</i>
(a) All VOCs, except as listed.	0.0005
<u>Methyl-tert-butyl ether</u>	<u>0.003</u>
Trichlorofluoromethane	0.005
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.01
(b) SOCs	
Alachlor.	0.001
Atrazine.	0.001
Bentazon.	0.002
Benzo(a)pyrene.	0.0001
Carbofuran.	0.005
Chlordane.	0.0001
2,4-D.	0.01
Dalapon.	0.01
Dibromochloropropane (DBCP).	0.00001
Di(2-ethylhexyl)adipate.	0.005
Di(2-ethylhexyl)phthalate.	0.003
Dinoseb.	0.002
Diquat.	0.004
Endothall.	0.045
Endrin.	0.0001
Ethylene dibromide (EDB).	0.00002
Glyphosate.	0.025
Heptachlor.	0.00001
Heptachlor epoxide.	0.00001
Hexachlorobenzene.	0.0005
Hexachlorocyclopentadiene.	0.001
Lindane.	0.0002
Methoxychlor.	0.01
Molinate.	0.002
Oxamyl.	0.02
Pentachlorophenol.	0.0002
Picloram.	0.001

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<i>Chemical</i>	<i>Detection Limit for Purposes of Reporting (DLR)(mg/L)</i>
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0005
Simazine	0.001
Thiobencarb	0.001
Toxaphene	0.001
2,3,7,8-TCDD (Dioxin)	5 x 10 ⁻⁹
2,4,5-TP (Silvex)	0.001

(b) When organic chemicals are not detected pursuant to Table 64445.1-A.

(1) A water system which has not detected any of the VOCs on Table 64444-A during the initial four quarters of monitoring, shall collect and analyze one sample annually. After a minimum of three years of annual sampling with no detection of a VOC in Table 64444-A, a system using groundwater may reduce the monitoring frequency to one sample during each compliance period. A system using surface water shall continue monitoring annually.

(2) A system serving more than 3,300 persons which has not detected an SOC on Table 64444-A during the initial four quarters of monitoring shall collect a minimum of two quarterly samples for that SOC in one year during the year designated by the Department of each subsequent compliance period. The year will be designated on the basis of historical monitoring frequency and laboratory capacity.

(3) A system serving 3,300 persons or less which has not detected an SOC on Table 64444-A during the initial four quarters of monitoring shall collect a minimum of one sample for that SOC during the year designated by the Department of each subsequent compliance period. The year will be designated on the basis of historical monitoring frequency and laboratory capacity.

(c) When organic chemicals are detected pursuant to Table 64445.1-A.

(1) Prior to proceeding with the requirements of paragraphs (c)(2) through (7), the water supplier may first confirm the analytical result, as follows: Within seven days from the notification of an initial finding from a laboratory reporting the presence of one or more organic chemical in a water sample, the water supplier shall collect one or two additional sample(s) to confirm the initial finding. Confirmation of the initial finding shall be shown by the presence of the organic chemical in either the first or second additional sample, and the detected level of the contaminant for compliance purposes shall be the average of the initial and confirmation sample(s). The initial finding shall be disregarded if two additional samples do not show the presence of the organic chemical.

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(2) If one or both of the related organic chemicals heptachlor and heptachlor epoxide are detected, subsequent monitoring shall analyze for both chemicals until there has been no detection of either chemical for one compliance period.

(3) A groundwater sampling site at which one or more of the following chemicals has been detected shall be monitored quarterly for vinyl chloride: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene. If vinyl chloride is not detected in the first quarterly sample, the sampling site shall be monitored once for vinyl chloride during each compliance period.

(4) If the detected level of organic chemicals for any sampling site does not exceed any shown in Table 64444-A, the water source shall be resampled every three months and the samples analyzed for the detected chemicals. After one year of sampling an approved surface water system or two quarters of sampling a groundwater system, the Department will consider allowing the water supplier to reduce the sampling to once per year upon request, based on a review of previous sampling data. Systems shall monitor during the quarter(s) which previously yielded the highest analytical results.

(5) If the detected level of an organic chemical for any sampling site exceeds that listed in Table 64444-A, the water supplier shall report this information to the Department within 48 hours. Unless use of the contaminated source is discontinued, the water supplier shall resample the contaminated source as follows:

(A) Water systems serving more than 3,300 persons shall sample monthly for six months and shall submit the results to the Department as specified in Section 64451(a). A water source shall be deemed to be in compliance with Section 64444 if the average concentration of the initial finding, confirmation sample(s), and six subsequent monthly samples does not exceed the MCL shown in Table 64444-A. In such cases, the water supplier may reduce the sampling frequency to once every three months. If the average annual concentration of four quarterly samples exceeds the MCL, the water source shall be deemed to be in violation of Section 64444. If any sample would cause the annual average to exceed the MCL, then the system is out of compliance immediately.

(B) Water systems serving 3,300 persons or less shall sample quarterly for one year and shall submit the results to the Department as specified in Section 64451(a). Compliance with Section 64444 shall be based on the average concentration of the initial finding, confirmation sample(s) if collected, and three subsequent quarterly samples. If any sample would cause the annual average to exceed the MCL, then the system is out of compliance immediately. If the average concentration does not exceed the MCL in Table 64444-A, the water supplier may reduce the sampling frequency to once every year during the quarter that previously yielded the highest analytical result. If the average concentration exceeds the MCL in Table 64444-A, the water system shall be deemed to be in violation of Section 64444. Subsequently, compliance shall be determined on the basis of a running annual average of the most recent four quarters of sample results.

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(6) If any resample, other than those taken in accordance with (c)(5) of this section, of a water sampling site shows that the concentration of any organic chemical exceeds a MCL shown in Table 64444-A, the water supplier shall proceed in accordance with (c)(1) and (c)(4), or (c)(5).

(7) If an organic chemical is detected and the concentration exceeds ten times the MCL, the water supplier shall notify the Department within 48 hours of the receipt of the results and the contaminated site shall be resampled within 48 hours to confirm the result. The water supplier shall notify the Department of the result of the confirmation sample(s) within 24 hours of the receipt of the confirmation result(s).

(A) If the average concentration of the original and confirmation sample(s) is less than ten times the MCL, the water supplier shall proceed in accordance with subsection (c)(5).

(B) If the average concentration of the original and confirmation samples exceeds ten times the MCL, use of the contaminated water source shall immediately be discontinued. Such a water source shall not be returned to service without written approval from the Department.

Note: Authority cited: Sections ~~208 and 4023.3~~ 100275 and 116375, Health and Safety Code.
Reference: Sections ~~4017, 4024, 4028 and 4029~~ 116385, 116450, 116460, and 116555, Health and Safety Code.

ARTICLE 12. BEST AVAILABLE TECHNOLOGIES (BAT)

Section 64447.2. Best available technologies (BAT) - inorganic chemicals

The technologies listed in Table 64447.2-A are the best available technology, treatment techniques, or other means available for achieving compliance with the MCLs in table 64431-A for inorganic chemicals.

Table 64447.2-A
Best Available Technologies (BAT)
Inorganic Chemicals

<i>Chemical</i>	<i>Best Available Technologies (BATs)</i>
Aluminum	10
Antimony	2, 7
Arsenic	1, 2, 5, 6, 7
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Cadmium	2, 5, 6, 7
Chromium	2, 5, 6 ^a , 7
Cyanide	5, 7, 11
<u>Fluoride</u>	<u>1</u>
Mercury	2 ^b , 4, 6 ^b , 7 ^b
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2 ^c , 6, 7, 9
Thallium	1, 5

^aBAT for Chromium III only.

^bBAT only if influent mercury concentrations <10 ug/L.

^cBAT for Selenium IV only.

Key to BATs in Table 64447.2:

- 1 = Activated Alumina
- 2 = Coagulation/Filtration (not BAT for systems < 500 service connections)
- 3 = Direct and Diatomite Filtration
- 4 = Granular Activated Carbon
- 5 = Ion Exchange
- 6 = Lime Softening (not BAT for systems < 500 service connections)
- 7 = Reverse Osmosis

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8 = Corrosion Control

9 = Electrodialysis

10 = Optimizing treatment and reducing aluminum added

11 = Chlorine oxidation

Note: Authority cited: Section ~~4023.2~~ 116370, Health and Safety Code.

Reference: Section ~~4024~~ 116350, Health and Safety Code.

Section 64447.4. Best available technologies (BATs) - organic chemicals

The technologies listed in Table 64447.4-A are the best available technology, treatment technologies, or other means available for achieving compliance with the MCLs in Table 64444-A for organic chemicals.

Table 64447.4-A
Best Available Technologies (BATs)
Organic Chemicals

<i>Chemical</i>	<i>Best Available Technologies</i>		
	Granular Activated Carbon	Packed Tower Aeration	Oxidation
(a) Volatile Organic Chemicals (VOCs)			
Benzene	X	X	
Carbon Tetrachloride	X	X	
1,2-Dichlorobenzene	X	X	
1,4-Dichlorobenzene	X	X	
1,1-Dichloroethane	X	X	
1,2-Dichloroethane	X	X	
1,1-Dichloroethylene	X	X	
cis-1,2-Dichloroethylene	X	X	
trans-1,2-Dichloroethylene	X	X	
Dichloromethane		X	
1,2-Dichloropropane	X	X	
1,3-Dichloropropene	X	X	
Ethylbenzene	X	X	
<u>Methyl-tert-butyl ether</u>		<u>X</u>	
Monochlorobenzene	X	X	
Styrene	X	X	
1,1,2,2-Tetrachloroethane	X	X	
Tetrachloroethylene	X	X	
Toluene	X	X	
1,2,4-Trichlorobenzene	X	X	
1,1,1-Trichloroethane	X	X	
1,1,2-Trichloroethane	X	X	
Trichlorofluoromethane	X	X	
Trichlorotrifluoroethane	X	X	
Trichloroethylene	X	X	
Vinyl Chloride		X	

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<i>Chemical</i>	<i>Best Available Technology</i>		
	Granular Activated Carbon	Packed Tower Aeration	Oxidaton
Xylenes	X	X	
(b) Synthetic Organic Chemicals (SOCs)			
Alachlor	X	X	
Atrazine	X		
Bentazon		X	
Benzo(a)pyrene	X		
Carbofuran	X		
Chlordane	X		
2,4-D	X		
Dalapon	X		
Di(2-ethylhexyl)adipate	X	X	
Dinoseb	X		
Diquat	X		
1,2-Dibromo-3-chloropropane	X	X	
Di(2-ethylhexyl)phthalate	X		
Endothall	X		
Endrin	X		
Ethylene Dibromide	X	X	
Glyphosate			X
Heptachlor	X		
Heptachlor epoxide	X		
Hexachlorobenzene	X		
Hexachlorocyclopentadiene	X	X	
Lindane	X		
Methoxychlor	X		
Molinate	X		
Oxamyl	X		
Picloram	X		
Pentachlorophenol	X		
Polychlorinated Biphenyls	X		
Simazine	X		
Thiobencarb	X		
Toxaphene	X	X	
2,3,7,8-TCDD (Dioxin)	X		
2,4,5-TP (Silvex)	X		

Note: Authority cited: Section ~~4023.2~~ 116370, Health and Safety Code.
Reference: Section ~~4024~~ 116350, Health and Safety Code.

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ARTICLE 17. SPECIAL MONITORING REQUIREMENTS FOR UNREGULATED
ORGANIC CHEMICALS

Section 64450. Unregulated chemicals

Community water systems and nontransient-noncommunity water systems shall monitor for the chemicals in Tables 64450-A, 64450-B, 64450-C, and 64450-D, pursuant to Section 64450.1:

Table 64450-A
Unregulated Organic Chemicals -- List A

<i>Chemical</i>	<i>Synonyms</i>
(1) Bromobenzene	Monobromobenzene
(2) Bromodichloromethane	Dichlorobromomethane
(3) Bromoform	Tribromomethane
(4) Bromomethane	Methyl Bromide
(5) Chlorodibromomethane	Dibromochloromethane
(6) Chloroethane	Ethyl Chloride
(7) Chloroform	Trichloromethane
(8) Chloromethane	Methyl Chloride
(9) 2-Chlorotoluene	o-Chlorotoluene
(10) 4-Chlorotoluene	p-Chlorotoluene
(11) Dibromomethane	Methylene Bromide
(12) 1,3-Dichlorobenzene	m-Dichlorobenzene
(13) Dichlorodifluoromethane	Difluorodichloromethane
(14) 1,3-Dichloropropane	
(15) 2,2-Dichloropropane	
(16) 1,1-Dichloropropene	
(17) 1,1,1,2-Tetrachloroethane	
(18) 1,2,3-Trichloropropane	Allyl Trichloride

Table 64450-B
Unregulated Organic Chemicals - List B

<i>Chemical</i>	<i>Synonyms</i>
(1) Bromacil	HYVAR X, HYVAR XL
(2) Bromochloromethane	Chlorobromomethane
(3) n-Butylbenzene	1-Phenylbutane
(4) sec-Butylbenzene	2-Phenylbutane
(5) tert-Butylbenzene	2-Methyl-2-phenylpropane
(6) Chlorothalonil	BRAVO
(7) Dimethoate	CYGON
(8) Diuron	KARMEX, KROVAR
(9) Ethyl- <i>tert</i> -butyl ether	ETBE
(10) Hexachlorobutadiene	Perchlorobutadiene
(11) Isopropylbenzene	Cumene
(12) p-Isopropyltoluene	p-Cymene
(13) Methyl-<i>tert</i>-butyl ether**	MTBE
(14) <u>(13)</u> Naphthalene	Naphthalin
(15) <u>(14)</u> 1-Phenylpropane	n-Propylbenzene
(16) <u>(15)</u> Prometryn	CAPAROL
(17) <u>(16)</u> <i>tert</i>-Amyl-methyl ether	TAME
(18) <u>(17)</u> 1,2,3-Trichlorobenzene	vic-Trichlorobenzene
(19) <u>(18)</u> 1,2,4-Trimethylbenzene	Pseudocumene
(20) <u>(19)</u> 1,3,5-Trimethylbenzene	Mesitylene

~~**Monitoring pursuant to Section 64450.1 for methyl-*tert*-butyl ether as an unregulated chemical is required only for nontransient noncommunity water systems.~~

Table 64450-C
Unregulated Organic Chemicals - List C

<i>Chemical</i>	<i>Synonyms</i>
(1) Aldicarb	
(2) Aldicarb sulfone	
(3) Aldicarb sulfoxide	
(4) Aldrin	Aldrec, Aldron
(5) Butachlor	Butanex, Lambast, Machete
(6) Carbaryl	Sevin
(7) Dicamba	Banex, Banvel, Dianat
(8) Dieldrin	
(9) 3-Hydroxycarbofuran	
(10) Methomyl	Lannate

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(11) Metolachlor	Metelilachlor
(12) Metribuzin	Lexone, Sencor, Sencoral
(13) Propachlor	Albrass, Ramrod

Table 64450-D
Unregulated Inorganic Chemical

Chemical

Synonym

Perchlorate

Note: Authority cited: Sections 100275, 116350 and 116375, Health and Safety Code.
Reference: Sections 116385 and 116555, Health and Safety Code.

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Section 64468.2. Health effects language - volatile organic chemicals

Pursuant to Section 64467, the explanation of potential adverse health effects for volatile organic chemicals shall include the following mandatory language for the designated contaminants:

(a) Benzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for benzene at 0.001 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(b) Carbon tetrachloride: "The California Department of Health Services (DHS) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for carbon tetrachloride at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(c) 1,2-Dichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that ortho-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. DHS has set the drinking water standard for ortho-dichlorobenzene at 0.6 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to ortho-dichlorobenzene."

(d) para-Dichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels of their lifetimes. Chemicals which cause adverse effects in

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laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for para-dichlorobenzene at 0.005 part per million (ppm) to reduce the risk of these adverse effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(e) 1,2-Dichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes, and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,2-dichloroethane at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(f) 1,1-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.006 part per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(g) cis-1,2-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that cis-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for cis-1,2-dichloroethylene at 0.006 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene."

(h) trans-1,2-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that trans-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for trans-1,2-dichloroethylene at

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0.01 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to trans-1,2-dichloroethylene."

(i) Dichloromethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for dichloromethane at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dichloromethane."

(j) 1,2-Dichloropropane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climatic conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into ground water. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for 1,2-dichloropropane at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to 1,2-dichloropropane."

(k) Ethylbenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. DHS has set the drinking water standard for ethylbenzene at 0.7 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene."

(l) Methyl-tert-butyl ether: "The California Department of Health Services (DHS) sets drinking water standards and has determined that Methyl-tert-butyl ether (MTBE) is a health concern at certain levels of exposure. This organic chemical is used in gasoline and in chemical laboratories. It generally gets into water from leaking underground gasoline storage tanks and pipelines. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for MTBE at 0.013 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been

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observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to MTBE."

(~~m~~) (m) Monochlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. DHS has set the drinking water standard for monochlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene."

(~~m~~) (n) Styrene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. DHS has set the drinking water standard for styrene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to styrene."

(~~n~~) (o) Tetrachloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for tetrachloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene."

(~~o~~) (p) Toluene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, kidney and nervous system. DHS has set the drinking water standard for toluene at 0.15 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to toluene."

(~~p~~) (q) 1,2,4-Trichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial

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activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. DHS has set the drinking water standard for 1,2,4-trichlorobenzene 0.07 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene."

(r) 1,1,1-Trichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 part per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to 1,1,1-trichloroethane."

(s) 1,1,2-Trichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharges of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. DHS has set the drinking water standard for 1,1,2-trichloroethane at 0.005 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2-trichloroethane."

(t) Trichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set forth the enforceable drinking water standard for trichloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to trichloroethane."

(u) Vinyl chloride: "The California Department of Health Services (DHS) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes."

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Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for vinyl chloride at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to vinyl chloride."

(v) Xylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for xylene at 1.750 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to xylene."

Authority cited: Sections ~~208~~ 100275 and ~~4028~~ 116450, Health and Safety Code.
Reference: Sections ~~4010-4039.5~~ 116300-116745, Health and Safety Code.