

**Table 3A.** Volatile organic compounds and gasoline additives, primary uses or sources, comparative thresholds, and reporting information for the USGS National Water Quality Laboratory schedule 2020.

[The five-digit USGS parameter code is used to uniquely identify a specific constituent or property. CAS, Chemical Abstract Service; LRL, laboratory reporting level; HAL-US, U.S. Environmental Protection Agency Lifetime Health Advisory; MCL-CA, California Department of Public Health maximum contaminant level; MCL-US, U.S. Environmental Protection Agency maximum contaminant level; NL-CA, California Department of Public Health notification level; RSD5-US, U.S. Environmental Protection Agency risk specific dose at a risk-specific factor of  $10^{-5}$ ; THM, trihalomethane; D, detected in ground-water samples (table 5); na, not available;  $\mu\text{g/L}$ , micrograms per liter; —, not detected]

Constituent	Primary use or source	USGS parameter code	CAS number	LRL ( $\mu\text{g/L}$ )	Threshold type <sup>1</sup>	Threshold value ( $\mu\text{g/L}$ )	Detection
Acetone	Solvent	81552	67-64-1	6	na	na	—
Acrylonitrile	Organic synthesis	34215	107-13-1	0.8	RSD5-US	0.6	—
Benzene	Gasoline hydrocarbon	34030	71-43-2	0.021	MCL-CA	1	—
Bromobenzene	Solvent	81555	108-86-1	0.028	na	na	—
Bromochloromethane	Fire retardant	77297	74-97-5	0.12	HAL-US	90	—
Bromodichloromethane	Disinfection by-product (THM)	32101	75-27-4	0.028	MCL-US	<sup>2</sup> 80	—
Bromoform (Tribromomethane)	Disinfection by-product (THM)	32104	75-25-2	0.10	MCL-US	<sup>2</sup> 80	—
2-Butanone (MEK, Methyl ethyl ketone)	Solvent	81595	78-93-3	2	HAL-US	4,000	—
<i>n</i> -Butylbenzene	Gasoline hydrocarbon	77342	104-51-8	0.12	NL-CA	260	—
<i>sec</i> -Butylbenzene	Gasoline hydrocarbon	77350	135-98-8	0.06	NL-CA	260	—
<i>tert</i> -Butylbenzene	Gasoline hydrocarbon	77353	98-06-6	0.06	NL-CA	260	—
Carbon disulfide	Organic synthesis	77041	75-15-0	0.038	NL-CA	160	—
Carbon tetrachloride (Tetrachloromethane)	Solvent	32102	56-23-5	0.06	MCL-CA	0.5	D
Chlorobenzene	Solvent	34301	108-90-7	0.028	MCL-CA	70	—
Chloroethane	Solvent	34311	75-00-3	0.12	na	na	—
Chloroform (Trichloromethane)	Disinfection by-product (THM)	32106	67-66-3	0.024	MCL-US	<sup>2</sup> 80	D
Chloromethane	Refrigerant/organic synthesis	34418	74-87-3	0.17	HAL-US	30	—
3-Chloro-1-propene	Organic synthesis	78109	107-05-1	0.5	na	na	— <sup>(4)</sup>
2-Chlorotoluene	Solvent	77275	95-49-8	0.04	NL-CA	140	—
4-Chlorotoluene	Solvent	77277	106-43-4	0.05	NL-CA	140	—
Dibromochloromethane	Disinfection by-product (THM)	32105	124-48-1	0.10	MCL-US	<sup>2</sup> 80	—
1,2-Dibromo-3-chloropropane (DBCP)	Fumigant	82625	96-12-8	0.51	MCL-US	0.2	—
1,2-Dibromoethane (EDB)	Fumigant	77651	106-93-4	0.036	MCL-US	0.05	—
Dibromomethane	Solvent	30217	74-95-3	0.050	na	na	—
1,2-Dichlorobenzene	Solvent	34536	95-50-1	0.048	MCL-CA	600	D
1,3-Dichlorobenzene	Solvent	34566	541-73-1	0.03	HAL-US	600	—
1,4-Dichlorobenzene	Fumigant	34571	106-46-7	0.034	MCL-CA	5	—
<i>trans</i> -1,4-Dichloro-2-butene	Organic synthesis	73547	110-57-6	0.70	na	na	—
Dichlorodifluoromethane (CFC-12)	Refrigerant	34668	75-71-8	0.18	NL-CA	1,000	— <sup>(5)</sup>
1,1-Dichloroethane	Solvent	34496	75-34-3	0.035	MCL-CA	5	—
1,2-Dichloroethane	Solvent	32103	107-06-2	0.13	MCL-CA	0.5	—
1,1-Dichloroethene (DCE)	Organic synthesis	34501	75-35-4	0.024	MCL-CA	6	—
<i>cis</i> -1,2-Dichloroethene	Solvent	77093	156-59-2	0.024	MCL-CA	6	D

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Constituent	Primary use or source	USGS parameter code	CAS number	LRL (µg/L)	Threshold type <sup>1</sup>	Threshold value (µg/L)	Detection
<i>trans</i> -1,2-Dichloroethene	Solvent	34546	156-60-5	0.032	MCL-CA	10	—
Dichloromethane (Methylene chloride)	Solvent	34423	75-09-2	0.06	MCL-US	5	— <sup>(5)</sup>
1,2-Dichloropropane	Fumigant	34541	78-87-5	0.029	MCL-US	5	D
1,3-Dichloropropane	Fumigant	77173	142-28-9	0.06	na	na	— <sup>(4)</sup>
2,2-Dichloropropane	Fumigant	77170	594-20-7	0.05	na	na	—
1,1-Dichloropropene	Organic synthesis	77168	563-58-6	0.026	na	na	— <sup>(4)</sup>
<i>cis</i> -1,3-Dichloropropene	Fumigant	34704	10061-01-5	0.05	RSD5-US	<sup>3</sup> 4	—
<i>trans</i> -1,3-Dichloropropene	Fumigant	34699	10061-02-6	0.09	RSD5-US	<sup>3</sup> 4	—
Diethyl ether	Solvent	81576	60-29-7	0.08	na	na	—
Diisopropyl ether (DIPE)	Gasoline oxygenate	81577	108-20-3	0.10	na	na	—
Ethylbenzene	Gasoline hydrocarbon	34371	100-41-4	0.030	MCL-CA	300	—
Ethyl <i>tert</i> -butyl ether (ETBE)	Gasoline oxygenate	50004	637-92-3	0.030	na	na	—
Ethyl methacrylate	Organic synthesis	73570	97-63-2	0.18	na	na	—
1-Ethyl-2-methylbenzene ( <i>o</i> -Ethyl toluene)	Gasoline hydrocarbon	77220	611-14-3	0.06	na	na	—
Hexachlorobutadiene	Organic synthesis	39702	87-68-3	0.14	RSD5-US	9	—
Hexachloroethane	Solvent	34396	67-72-1	0.14	HAL-US	1	—
2-Hexanone ( <i>n</i> -Butyl methyl ketone)	Solvent	77103	591-78-6	0.4	na	na	—
Isopropylbenzene (Cumene)	Gasoline hydrocarbon	77223	98-82-8	0.038	NL-CA	770	—
4-Isopropyl-1-methylbenzene	Gasoline hydrocarbon	77356	99-87-6	0.08	na	na	—
Methyl acrylate	Organic synthesis	49991	96-33-3	1.0	na	na	—
Methyl acrylonitrile	Organic synthesis	81593	126-98-7	0.40	na	na	—
Methyl bromide (Bromomethane)	Fumigant	34413	74-83-9	0.33	HAL-US	10	—
Methyl <i>tert</i> -butyl ether (MTBE)	Gasoline oxygenate	78032	1634-04-4	0.10	MCL-CA	13	D
Methyl iodide (Iodomethane)	Organic synthesis	77424	74-88-4	0.50	na	na	—
Methyl isobutyl ketone (MIBK)	Solvent	78133	108-10-1	0.37	NL-CA	120	—
Methyl methacrylate	Organic synthesis	81597	80-62-6	0.20	na	na	—
Methyl <i>tert</i> -pentyl ether ( <i>tert</i> -Amyl methyl ether, TAME)	Gasoline oxygenate	50005	994-05-8	0.04	na	na	—
Naphthalene	Gasoline hydrocarbon	34696	91-20-3	0.52	NL-CA	17	—
<i>n</i> -Propylbenzene	Solvent	77224	103-65-1	0.042	NL-CA	260	—
Styrene	Gasoline hydrocarbon	77128	100-42-5	0.042	MCL-US	100	—
1,1,1,2-Tetrachloroethane	Solvent	77562	630-20-6	0.03	HAL-US	70	—
1,1,2,2-Tetrachloroethane	Solvent	34516	79-34-5	0.08	MCL-CA	1	—
Tetrachloroethene (PCE)	Solvent	34475	127-18-4	0.030	MCL-US	5	D
Tetrahydrofuran	Solvent	81607	109-99-9	1.2	na	na	—
1,2,3,4-Tetramethylbenzene	Gasoline hydrocarbon	49999	488-23-3	0.14	na	na	— <sup>(5)</sup>
1,2,3,5-Tetramethylbenzene	Gasoline hydrocarbon	50000	527-53-7	0.18	na	na	— <sup>(5)</sup>
Toluene	Gasoline hydrocarbon	34010	108-88-3	0.02	MCL-CA	150	—

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Constituent	Primary use or source	USGS parameter code	CAS number	LRL (µg/L)	Threshold type <sup>1</sup>	Threshold value (µg/L)	Detection
1,2,3-Trichlorobenzene	Organic synthesis	77613	87-61-6	0.18	na	na	— <sup>(5)</sup>
1,2,4-Trichlorobenzene	Solvent	34551	120-82-1	0.12	MCL-CA	5	—
1,1,1-Trichloroethane (TCA)	Solvent	34506	71-55-6	0.032	MCL-CA	200	—
1,1,2-Trichloroethane	Solvent	34511	79-00-5	0.04	MCL-CA	5	—
Trichloroethene (TCE)	Solvent	39180	79-01-6	0.038	MCL-US	5	D
Trichlorofluoromethane (CFC-11)	Refrigerant	34488	75-69-4	0.08	MCL-CA	150	D
1,2,3-Trichloropropane (1,2,3-TCP)	Solvent/organic synthesis	77443	96-18-4	0.18	NL-CA	0.005	—
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	Refrigerant	77652	76-13-1	0.038	MCL-CA	1,200	D
1,2,3-Trimethylbenzene	Gasoline hydrocarbon	77221	526-73-8	0.09	na	na	—
1,2,4-Trimethylbenzene	Gasoline hydrocarbon	77222	95-63-6	0.056	NL-CA	330	—
1,3,5-Trimethylbenzene	Organic synthesis	77226	108-67-8	0.044	NL-CA	330	—
Vinyl bromide (Bromoethene)	Fire retardant	50002	593-60-2	0.10	na	na	—
Vinyl chloride (Chloroethene)	Organic synthesis	39175	75-01-4	0.08	MCL-CA	0.5	—
<i>m</i> - and <i>p</i> -Xylene	Gasoline hydrocarbon	85795	108-38-3 / 106-42-3	0.06	MCL-CA	1,750	— <sup>(4)</sup>
<i>o</i> -Xylene	Gasoline hydrocarbon	77135	95-47-6	0.038	MCL-CA	1,750	—

<sup>1</sup>Maximum contaminant level thresholds are listed as MCL-US when the MCL-US and MCL-CA are identical, and as MCL-CA when the MCL-CA is lower than the MCL-US or no MCL-US exists.

<sup>2</sup>The MCL-US thresholds for trihalomethanes is the sum of chloroform, bromoform, bromodichloromethane, and dibromochloromethane.

<sup>3</sup>The RSD5 threshold for 1,3-dichloropropene is the sum of its isomers (cis and trans).

<sup>4</sup>The median matrix-spike recovery was greater than 130 percent.

<sup>5</sup>The median matrix-spike recovery was less than 70 percent. Low recoveries may indicate that the compound might not have been detected in some samples if it was present at very low concentrations.

<sup>6</sup>The preferred method for 1,2,3-Trichloropropane is MWH (table 3F).