

US EPA ARCHIVE DOCUMENT

SURFACE WATER - HUMAN HEALTH BENCHMARKS - State of Michigan

ANALYTE NAME (MDNRE with Annotation)	CAS #	SW Data Source	HNV Drink Value	HNV non-drink Value	WV Value	HCV Drink Value	HCV-nondrink Value	FCV Value	AMV Value	FAV Value
1,1,1,2-Tetrachloroethane #	630206	MDNRE Rule 57	680	3500	NA	19	100	ID	ID	ID
1,1,1-Trichloroethane	71556	MDNRE Rule 57	1900	42000	NA	NA	NA	89	800	1600
1,1,2,2-Tetrachloroethane #	79345	MDNRE Rule 57	180	4300	NA	3.2	78	200	910	1800
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	MDNRE Rule 57	444000	1834000	NA	NA	NA	32	280	570
1,1,2-Trichloroethane #	79005	MDNRE Rule 57	110	3000	NA	12	330	730	3200	6400
1,1-Dichloroethane	75343	MDNRE Rule 57	1500	62000	NA	NA	NA	740	6600	13000
1,1-Dichloroethylene	75354	MDNRE Rule 57	1200	33000	NA	NA	NA	130	1200	2300
1,2,3-Trichlorobenzene	87616	MDNRE Rule 57	55	73	NA	NA	NA	ID	ID	ID
1,2,4-Trichlorobenzene	120821	MDNRE Rule 57	80	99	NA	NA	NA	30	100	200
1,2,4-Trimethylbenzene	95636	MDNRE Rule 57	190	330	NA	NA	NA	17	150	310
1,2-Dibromo-3-chloropropane #	96128	MDNRE Rule 57	ID*	ID*	NA	0.24	4.9	ID	ID	ID
1,2-Dibromoethane #	106934	MDNRE Rule 57	250	8200	NA	0.17	5.7	15	140	280
1,2-Dichlorobenzene	95501	MDNRE Rule 57	2000	11000	NA	NA	NA	13	120	240
1,2-Dichloroethane #	107062	MDNRE Rule 57	6900	420000	NA	6	360	2000	8200	16000
1,2-Dichloropropane #	78875	MDNRE Rule 57	12000	380000	NA	9.1	290	230	2000	4000
1,3,5-Trimethylbenzene	108678	MDNRE Rule 57	2000	4200	NA	NA	NA	45	410	810
1,3-Dichlorobenzene	541731	MDNRE Rule 57	37	65	NA	NA	NA	28	100	200
1,4-Dichlorobenzene #	106467	MDNRE Rule 57	1100	11000	NA	24	240	17	100	210
1,4-Dioxane #	123911	MDNRE Rule 57	4000	320000	NA	34	2800	22000	200000	390000
2,2-Dichloropropane	594207	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
2-Hexanone	591786	MDNRE Rule 57	9700	630000	NA	NA	NA	ID	ID	ID
2-Propanol	67630	MDNRE Rule 57	28000	2200000	NA	NA	NA	57000	500000	1000000
4-Methyl-2-pentanone	108101	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Acenaphthylene	208968	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Acetone	67641	MDNRE Rule 57	5600	450000	NA	NA	NA	1700	15000	30000
Acrylonitrile #	107131	MDNRE Rule 57	58	320	NA	0.21	1.2	66	590	1200
Anthracene	120127	MDNRE Rule 57	1900	2400	NA	NA	NA	ID	ID	ID
Benzene #	71432	MDNRE Rule 57	19	510	NA	12	310	200	950	1900
Benzo(a)anthracene	56553	MDNRE Rule 57	NLS	NLS	NA	NLS	NLS	ID	ID	ID
Benzo(a)pyrene #	50328	MDNRE Rule 57	NLS	NLS	NA	NLS	NLS	ID	ID	ID
Benzo(b)fluoranthene #	205992	MDNRE Rule 57	NLS	NLS	NA	NLS	NLS	ID	ID	ID
Bromochloromethane	74975	MDNRE Rule 57	1000	59000	NA	NA	NA	ID	ID	ID
Bromoform #	75252	MDNRE Rule 57	470	8100	NA	52	890	ID	ID	ID
Bromomethane	74839	MDNRE Rule 57	39	2600	NA	NA	NA	35	320	640
Carbon disulfide	75150	MDNRE Rule 57	1000	34000	NA	NA	NA	ID	ID	ID
Carbon tetrachloride #	56235	MDNRE Rule 57	18	140	NA	5.6	45	77	690	1400
Chlorobenzene	108907	MDNRE Rule 57	470	3200	NA	NA	NA	25	220	450
Chloroethane #	75003	MDNRE Rule 57	500000	27000000	NA	170	9400	1100	10000	20000
Chloroform #	67663	MDNRE Rule 57	350	11000	NA	*	*	630	5700	11000
Chloromethane #	74873	MDNRE Rule 57	18000	1300000	NA	110	7300	ID	ID	ID
Chrysene #	218019	MDNRE Rule 57	ID	ID	NA	ID	ID	ID	ID	ID
cis-1,2-Dichloroethylene	156592	MDNRE Rule 57	880	36000	NA	NA	NA	620	5500	11000
cis-1,3-Dichloropropylene #	10061026	MDNRE Rule 57	930	39000	NA	3.3	140	9	81	160
Cyclohexane	110827	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Dibenz(a,h)anthracene #	53703	MDNRE Rule 57	NLS	NLS	NA	NLS	NLS	ID	ID	ID
Dibromochloromethane #	124481	MDNRE Rule 57	570	12000	NA	6.8	150	ID	ID	ID
Dichlorodifluoromethane	75718	MDNRE Rule 57	2900	90000	NA	NA	NA	ID	ID	ID
Ethanol	64175	MDNRE Rule 57	1500000	120000000	NA	NA	NA	NLS	NLS	NLS
Ethylbenzene #	100414	MDNRE Rule 57	2100	8900	NA	25	110	18	160	320
Fluoranthene	206440	MDNRE Rule 57	18	18	NA	NA	NA	1.6	14	28
Fluorene	86737	MDNRE Rule 57	140	160	NA	NA	NA	12	110	220
Hexachlorobutadiene # @	87683	MDNRE Rule 57	0.093	0.098	0.053	0.33	0.35	1	7	15
Hexachloroethane #	67721	MDNRE Rule 57	6	7.6	NA	5.3	6.7	13	110	210
Indeno (1,2,3-cd) pyrene #	193395	MDNRE Rule 57	NLS	NLS	NA	NLS	NLS	ID	ID	ID
Isopropylbenzene	98828	MDNRE Rule 57	1700	3800	NA	NA	NA	28	250	500

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Methyl ethyl ketone	78933	MDNRE Rule 57	49000	3800000	NA	NA	NA	2200	20000	40000
Methylene chloride #	75092	MDNRE Rule 57	1600	90000	NA	47	2600	1500	8500	17000
Naphthalene	91203	MDNRE Rule 57	1100	2300	NA	NA	NA	11	100	200
n-Butylbenzene	104518	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Nickel	7440020	MDNRE Rule 57	2600	210000	NA	NA	NA	(EXP(0.846*(LnH)+0.0584))*0.997D	(EXP(0.846*(LnH)+2.255))*0.998D	(EXP(0.846*(LnH)+2.255))*0.998*2D
Phenanthrene	85018	MDNRE Rule 57	ID*	ID*	NA	NA	NA	1.4	4.7	9.4
p-Isopropyltoluene	99876	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Pyrene	129000	MDNRE Rule 57	15	15	NA	NA	NA	ID	ID	ID
sec-Butylbenzene	135988	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Styrene #	100425	MDNRE Rule 57	4200	18000	NA	20	80	160	1400	2900
tert-Butylbenzene	98066	MDNRE Rule 57	ID	ID	NA	NA	NA	ID	ID	ID
Tetrachloroethylene #	127184	MDNRE Rule 57	320	1800	NA	11	60	190	1400	2900
Tetrahydrofuran	109999	MDNRE Rule 57	350	26000	NA	NA	NA	11000	74000	150000
Toluene	108883	MDNRE Rule 57	5600	51000	NA	NA	NA	270	1300	2600
trans-1,2-Dichloroethylene	156605	MDNRE Rule 57	470	19000	NA	NA	NA	1500	14000	28000
trans-1,3-Dichloropropylene #	10061015	MDNRE Rule 57	930	39000	NA	3.3	140	9	81	160
Trichloroethylene #	79016	MDNRE Rule 57	44	550	NA	29	370	200	1800	3500
Vanadium	7440622	MDNRE Rule 57	53	540	NA	NA	NA	12	110	220
Vinyl chloride #	75014	MDNRE Rule 57	83	4400	NA	0.25	13	930	8400	17000

LEGEND

- Human noncancer value (HNV): "drink" and "non-drink"
- Human cancer value (HCV): "drink" and "non-drink"
- (calculated only for carcinogens)
- Wildlife value (WV) (calculated only for Bioaccumulative Chemicals of Concern)
- Final chronic value (FCV)
- Aquatic maximum value (AMV)
- Final acute value (FAV)
- All chemical specific values are in ug/L and expressed as total unless otherwise indicated
- EXP = exponent in log base e
- H = hardness (in mg/L)
- ID = insufficient data to derive value
- NLS = no literature search has been conducted
- NA = not applicable
- @ = Bioaccumulative Chemical of Concern
- # = carcinogen
- * = the lowest HNV, WV, HCV or FCV given for this chemical will adequately protect the uses identified with "ID*"

CFa = acute conversion factor for cadmium = 1.136672-[(lnH)(0.04184)]
CFb = chronic conversion factor for cadmium = 1.101672-[(lnH)(0.04184)]
CFc = acute and chronic conversion factor for lead = 1.46203-[(lnH)(0.14571)]
D = value is expressed as dissolved