

1.1 **Department of Health**1.2 **Adopted Permanent Rules Pertaining to Health Risk Limits**1.3 **4717.7850 USE OF MAXIMUM CONTAMINANT LEVELS.**

1.4 Subpart 1. **Scope.** This part establishes the methods for determining a health risk
1.5 limit based on a maximum contaminant level.

1.6 Subp. 2. **Water level standards.** As authorized by Laws 2007, chapter 147, article
1.7 17, section 2, the maximum contaminant levels for the following chemicals are adopted
1.8 by reference as health risk limits:

- 1.9 A. Atrazine;
- 1.10 B. Dichloromethane;
- 1.11 C. Nitrate (as N);
- 1.12 D. Simazine;
- 1.13 E. 1,1,2,2-Tetrachloroethylene; and
- 1.14 F. 2(2,4,5-Trichlorophenoxy) propionic acid.

1.15 **4717.7860 HEALTH RISK LIMITS TABLE.**

1.16 [For text of subs 1 and 2, see M.R.]

1.17 Subp. 2a. **Acetaminophen.**

1.18 CAS number: 103-90-2

1.19 Year Adopted: 2015

1.20 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	200	200	200 (2)	200 (2)	NA
RfD (mg/kg-day)	0.25	0.25	(2)	(2)	–

1.21

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1.24

2.1	RSC	0.2	0.2	(2)	(2)	–
2.2	SF (per	–	–	–	–	–
2.3	mg/kg-day)					
2.4	ADAF or	–	–	–	–	–
2.5	AF_{lifetime}					
2.6	Intake Rate	0.289	0.289	(2)	(2)	–
2.7	(L/kg-day)					
2.8	Endpoints	hepatic (liver)	hepatic (liver)	hepatic (liver)	hepatic (liver)	–
2.9		system	system	system	system	

2.10 [For text of subps 3 to 3d, see M.R.]

2.11 Subp. 3e. **Acrylamide.**

2.12 CAS number: 79-06-1

2.13 Year Adopted: 2015

2.14 Volatility: Nonvolatile

2.15		Acute	Short-term	Subchronic	Chronic	Cancer
2.16	HRL (µg/L)	ND	7	7 (2)	7 (2)	0.2
2.17	RfD	–	0.010	(2)	(2)	–
2.18	(mg/kg-day)					
2.19	RSC	–	0.2	(2)	(2)	–
2.20	SF (per	–	–	–	–	0.5
2.21	mg/kg-day)					
2.22	ADAF or	–	–	–	–	10
2.23	AF_{lifetime}					(ADAF _{<2})
2.24						3 (ADAF ₂)
2.25						to <16)
2.26						1
2.27						(ADAF ₁₆₊)

3.1	Intake Rate (L/kg-day)	–	0.289	(2)	(2)	0.137(_{<2})
3.2						0.047(_{2 to})
3.3						^{<16})
3.4						0.039(₁₆₊)
3.5	Endpoints	–	developmental, male reproductive system, nervous system	developmental, male reproductive system, nervous system	developmental, male reproductive system, nervous system	cancer
3.6						
3.7						
3.8						
3.9						

3.10 [For text of subs 4 and 5, see M.R.]

3.11 Subp. 5a. **Bentazon.**

3.12 CAS number: 25057-89-0

3.13 Year Adopted: 2015

3.14 Volatility: Nonvolatile

3.15		Acute	Short-term	Subchronic	Chronic	Cancer
3.16	HRL (µg/L)	400	60	50	30	NA
3.17	RfD	0.22	0.033	0.020	0.0060	–
3.18	(mg/kg-day)					
3.19	RSC	0.5	0.5	0.2	0.2	–
3.20	SF (per	–	–	–	–	–
3.21	mg/kg-day)					
3.22	ADAF or	–	–	–	–	–
3.23	AF_{lifetime}					
3.24	Intake Rate	0.289	0.289	0.077	0.043	–
3.25	(L/kg-day)					
3.26	Endpoints	developmental, female reproductive system	developmental	hematological (blood) system	thyroid	–
3.27						
3.28						
3.29						

3.30 [For text of subp 6, see M.R.]

3.31 Subp. 6a. [Renumbered subp 6f]

4.1 Subp. 6b. [Renumbered subp 6g]

4.2 Subp. 6c. **Bisphenol A (BPA).**

4.3 CAS number: 80-05-7

4.4 Year Adopted: 2015

4.5 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer	
4.6 4.7	HRL (µg/L)	ND	100	20	20 (3)	NA
4.8 4.9	RfD (mg/kg-day)	–	0.16	0.0065	(3)	–
4.10	RSC	–	0.2	0.2	(3)	–
4.11 4.12	SF (per mg/kg-day)	–	–	–	–	–
4.13 4.14	ADAF or AF_{lifetime}	–	–	–	–	–
4.15 4.16	Intake Rate (L/kg-day)	–	0.289	0.077	(3)	–
4.17 4.18 4.19 4.20 4.21 4.22 4.23 4.24 4.25 4.26 4.27	Endpoints	–	developmental, female reproductive system (E), hepatic (liver) system, male reproductive system (E), renal (kidney) system, thyroid (E)	hepatic (liver) system, renal (kidney) system	hepatic (liver) system, renal (kidney) system	–

4.28 Subp. 6d. **Butyl benzyl phthalate.**

4.29 CAS number: 85-68-7

4.30 Year Adopted: 2015

4.31 Volatility: Low

	Acute	Short-term	Subchronic	Chronic	Cancer	
5.1 5.2	HRL (µg/L)	100	100	100 (2)	100 (2)	NA
5.3 5.4	RfD (mg/kg-day)	0.15	0.15	(2)	(2)	–
5.5	RSC	0.2	0.2	(2)	(2)	–
5.6 5.7	SF (per mg/kg-day)	–	–	–	–	–
5.8 5.9	ADAF or AF_{lifetime}	–	–	–	–	–
5.10 5.11	Intake Rate (L/kg-day)	0.289	0.289	(2)	(2)	–
5.12 5.13	Endpoints	developmental (E)	developmental (E)	developmental (E)	developmental (E)	–

5.14 Subp. 6e. **Cadmium.**

5.15 CAS number: 7440-43-9

5.16 Year Adopted: 2015

5.17 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer	
5.18 5.19	HRL (µg/L)	5	1	1	0.5	NA
5.20 5.21	RfD (mg/kg-day)	0.0077	0.0016	0.00044	0.00011	–
5.22	RSC	0.2	0.2	0.2	0.2	–
5.23 5.24	SF (per mg/kg-day)	–	–	–	–	–
5.25 5.26	ADAF or AF_{lifetime}	–	–	–	–	–
5.27 5.28	Intake Rate (L/kg-day)	0.289	0.289	0.077	0.043	–
5.29 5.30 5.31 5.32	Endpoints	developmental	developmental, nervous system, renal (kidney) system	developmental, skeletal	renal (kidney) system, skeletal	–

6.1 [For text of subps 7 and 8, see M.R.]

6.2 Subp. 8a. [Renumbered subp 8f]

6.3 Subp. 8b. [Renumbered subp 8g]

6.4 Subp. 8c. [Renumbered subp 8h]

6.5 Subp. 8d. [Renumbered subp 8i]

6.6 Subp. 8e. **Dibutyl phthalate.**

6.7 CAS number: 84-74-2

6.8 Year Adopted: 2015

6.9 Volatility: Low

	Acute	Short-term	Subchronic	Chronic	Cancer
6.10 HRL (µg/L)	20	20	20 (2)	20 (2)	NA
6.11 RfD	0.023	0.023	(2)	(2)	–
6.12 (mg/kg-day)					
6.13 RSC	0.2	0.2	(2)	(2)	–
6.14 SF (per	–	–	–	–	–
6.15 mg/kg-day)					
6.16 ADAF or	–	–	–	–	–
6.17 AF					
6.18 lifetime					
6.19 Intake Rate	0.289	0.289	(2)	(2)	–
6.20 (L/kg-day)					
6.21 Endpoints	developmental	developmental	developmental	developmental	–
6.22	(E)	(E)	(E)	(E)	

6.23 [For text of subps 9 to 11, see M.R.]

6.24 Subp. 11a. [Renumbered subp 11d]

6.25 Subp. 11b. [Renumbered subp 11f]

6.26 Subp. 11c. **Di(2-ethylhexyl) phthalate (DEHP).**

7.1 CAS number: 117-81-7

7.2 Year Adopted: 2015

7.3 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer	
7.4 7.5	HRL (µg/L)	20	20	20 (2)	20 (2)	7
7.6 7.7	RfD (mg/kg-day)	0.029	0.029	(2)	(2)	–
7.8	RSC	0.2	0.2	(2)	(2)	–
7.9 7.10	SF (per mg/kg-day)	–	–	–	–	0.014
7.11 7.12 7.13 7.14	ADAF or AF_{lifetime}	–	–	–	–	10 (ADAF _{<2}) 3 (ADAF ₂ to <16) 1 (ADAF ₁₆₊)
7.15 7.16 7.17	Intake Rate (L/kg-day)	0.289	0.289	(2)	(2)	0.137(_{<2}) 0.047(_{2 to <16}) 0.039(₁₆₊)
7.18 7.19 7.20 7.21	Endpoints	developmental (E), male reproductive system (E)	developmental (E), male reproductive system (E)	developmental (E), male reproductive system (E)	developmental (E), male reproductive system (E)	cancer

7.22 Subp. 11e. **Dimethenamid and Dimethenamid-p.**

7.23 CAS numbers: 87674-68-8 and 163515-14-8

7.24 Year Adopted: 2015

7.25 Volatility: Moderate

	Acute	Short-term	Subchronic	Chronic	Cancer	
7.26 7.27	HRL (µg/L)	ND	600	600 (2)	300	NA
7.28 7.29	RfD (mg/kg-day)	–	0.34	(2)	0.060	–
7.30	RSC	–	0.5	(2)	0.2	–

8.1	SF (per mg/kg-day)	–	–	–	–	–
8.2						
8.3	ADAF or AF_{lifetime}	–	–	–	–	–
8.4						
8.5	Intake Rate (L/kg-day)	–	0.289	(2)	0.043	–
8.6						
8.7	Endpoints	–	developmental, female reproductive system, hepatic (liver) system, nervous system	developmental, female reproductive system, hepatic (liver) system, nervous system	hepatic (liver) system	–
8.8						
8.9						
8.10						
8.11						
8.12						

8.13 Subp. 12. [See repealer.]

8.14 [For text of subps 12a to 13, see M.R.]

8.15 Subp. 14. **Pentachlorophenol (PCP).**

8.16 CAS number: 87-86-5

8.17 Year Adopted: 2015

8.18 Volatility: Low

	Acute	Short-term	Subchronic	Chronic	Cancer	
8.19						
8.20	HRL (µg/L)	7	7	7 (2)	7 (2)	0.3
8.21	RfD (mg/kg-day)	0.0040	0.0040	(2)	(2)	–
8.22						
8.23	RSC	0.5	0.5	(2)	(2)	–
8.24	SF (per mg/kg-day)	–	–	–	–	0.4
8.25						
8.26	ADAF or AF_{lifetime}	–	–	–	–	10 (ADAF _{<2})
8.27						3 (ADAF ₂)
8.28						to ¹⁶ ₁)
8.29						(ADAF ₁₆₊)
8.30						
8.31						

9.1	Intake Rate (L/kg-day)	0.289	0.289	(2)	(2)	0.137(_{<2})
9.2						0.047(_{2 to})
9.3						^{<16})
9.4						0.039(₁₆₊)
9.5	Endpoints	developmental, thyroid (E)	developmental (E), thyroid (E)	developmental (E), hepatic (liver) system, immune system, male reproductive system, thyroid (E)	developmental (E), hepatic (liver) system, immune system, male reproductive system, thyroid (E)	cancer
9.6						
9.7						
9.8						
9.9						
9.10						
9.12						

[For text of subps 14a to 17, see M.R.]

Subp. 17a. **Sulfamethazine (includes sodium salt form).**

CAS number: 57-68-1 (1981-58-4)

Year Adopted: 2015

Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	100	100 (2)	100 (2)	NA
RfD (mg/kg-day)	–	0.040	(2)	(2)	–
RSC	–	0.8	(2)	(2)	–
SF (per mg/kg-day)	–	–	–	–	–
ADAF or AF_{lifetime}	–	–	–	–	–
Intake Rate (L/kg-day)	–	0.289	(2)	(2)	–
Endpoints	–	thyroid	thyroid	thyroid	–

[For text of subps 18 to 19, see M.R.]

Subp. 20. **1,1,2-Trichloroethylene (TCE).**

10.1 CAS number: 79-01-6
 10.2 Year Adopted: 2015
 10.3 Volatility: High

	Acute	Short-term	Subchronic	Chronic	Cancer	
10.4 10.5	HRL (µg/L)	ND	0.4	0.4	0.4 (3)	2
10.6 10.7	RfD (mg/kg-day)	–	0.00052	0.00017	(3)	–
10.8	RSC	–	0.2	0.2	(3)	–
10.9 10.10	SF (per mg/kg-day)	–	–	–	–	0.05
10.11 10.12 10.13 10.14 10.15	ADAF or AF _{lifetime}	–	–	–	–	10 (ADAF _{<2}) 3 (ADAF ₂ to <16) 1 (ADAF ₁₆₊)
10.16 10.17 10.18	Intake Rate (L/kg-day)	–	0.289	0.077	(3)	0.137(_{<2}) 0.047(_{2 to <16}) 0.039(₁₆₊)
10.19 10.20	Endpoints	–	developmental, immune system	developmental, immune system	developmental, immune system	cancer

10.21 [For text of subs 21 to 24, see M.R.]

10.22 **4717.7865 HEALTH RISK LIMITS FOR TRICLOSAN.**

10.23 Subpart 1. **Purpose.** Notwithstanding the purpose and scope of health risk limits
 10.24 described in part 4717.7810, and as authorized by ~~Laws 2013, chapter 137, article 2,~~
 10.25 ~~section 8~~ Minnesota Statutes, section 144.12, subdivision 1, clause (5), the following
 10.26 values are adopted as health risk limits for triclosan.

10.27 Subp. 2. **Triclosan.**

11.1 CAS number: 3380-34-5

11.2 Year Adopted: 2015

11.3 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer	
11.4 11.5	HRL (µg/L)	ND	50	50 (2)	50 (2)	NA
11.6 11.7	RfD (mg/kg-day)	–	0.067	(2)	(2)	–
11.8	RSC	–	0.2	(2)	(2)	–
11.9 11.10	SF (per mg/kg-day)	–	–	–	–	–
11.11 11.12	ADAF or AF_{lifetime}	–	–	–	–	–
11.13 11.14	Intake Rate (L/kg-day)	–	0.289	(2)	(2)	–
11.15 11.16 11.17 11.18 11.19 11.20 11.21	Endpoints	–	developmental, female reproductive system (E), hepatic (liver) system, thyroid (E)	developmental, female reproductive system (E), hepatic (liver) system, thyroid (E)	developmental, female reproductive system (E), hepatic (liver) system, thyroid (E)	–

11.22 **REPEALER.** Minnesota Rules, parts 4717.7500, subparts 19, 21, and 32; and 4717.7860,
11.23 subpart 12, are repealed.