

1.1 **Department of Health**1.2 **Proposed Permanent Rules Relating to Health Risk Limits for Groundwater**  
1.3 **Standards**1.4 **4717.7860 HEALTH RISK LIMITS TABLE.**

1.5 Subpart 1. **Generally.** This table lists the health risk limits derived from methods  
1.6 specified in parts 4717.7830, 4717.7840, and 4717.7850. For each chemical, this table  
1.7 specifies:

1.8 A. the chemical name;

1.9 B. the CAS number;

1.10 C. the year the HRL was ~~established~~ adopted;

1.11 D. the volatility classification;

1.12 E. any noncancer HRL;

1.13 F. any cancer HRL;

1.14 G. the RfD and RSC used in the derivation of any noncancer HRL;

1.15 H. the slope factor and any ADAF or  $AF_{lifetime}$  used in the derivation of any  
1.16 cancer HRL;

1.17 I. the intake rate used in the derivation of any noncancer or cancer HRL; and

1.18 J. the health endpoints.

1.19 [For text of subp 2, see M.R.]

1.20 **Subp. 3. Acetochlor.**

1.21 CAS number: 34256-82-1

1.22 ~~Year Established: 2008~~ Adopted: 2009

1.23 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
2.1 2.2	<b>HRL (µg/L)</b>	40	40	40 (2)	9	NA
2.3 2.4	<b>RfD (mg/kg-day)</b>	0.021	0.021	(2)	0.002	–
2.5	<b>RSC</b>	0.5	0.5	(2)	0.2	–
2.6 2.7	<b>SF (per mg/kg-day)</b>	–	–	–	–	–
2.8 2.9	<b>ADAF or AF<sub>lifetime</sub></b>	–	–	–	–	–
2.10 2.11	<b>Intake Rate (L/kg-day)</b>	0.289	0.289	(2)	0.043	–
2.12 2.13 2.14 2.15 2.16 2.17 2.18 2.19 2.20	<b>Endpoints</b>	developmental	developmental	developmental	hepatic (liver) system, male reproductive system, nervous system, renal (kidney) system, respiratory system	–

2.21 Subp. 3a. **Acetochlor ESA.**

2.22 CAS number: 187022-11-3

2.23 Year Proposed: ~~2010~~ Adopted: 2011

2.24 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
2.25 2.26	<b>HRL (µg/L)</b>	ND	600	600	300	NA
2.27 2.28	<b>RfD (mg/kg-day)</b>	–	0.37	0.23	0.075	–
2.29	<b>RSC</b>	–	0.5	0.2	0.2	–
2.30 2.31	<b>SF (per mg/kg-day)</b>	–	–	–	–	–

3.1	<b>ADAF or</b>	–	–	–	–	–
3.2	<b>AF<sub>lifetime</sub></b>					
3.3	<b>Intake Rate</b>	–	0.289	0.077	0.043	–
3.4	<b>(L/kg-day)</b>					
3.5	<b>Endpoints</b>	–	thyroid (E)	thyroid (E)	thyroid (E)	–

3.6 Subp. 3b. **Acetochlor OXA.**

3.7 CAS number: 184992-44-4

3.8 Year Proposed: ~~2010~~ Adopted: 2011

3.9 Volatility: Nonvolatile

3.10		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
3.11	<b>HRL (µg/L)</b>	ND	200	200	100	NA
3.12	<b>RfD</b>	–	0.12	0.077	0.026	–
3.13	<b>(mg/kg-day)</b>					
3.14	<b>RSC</b>	–	0.5	0.2	0.2	–
3.15	<b>SF (per</b>	–	–	–	–	–
3.16	<b>mg/kg-day)</b>					
3.17	<b>ADAF or</b>	–	–	–	–	–
3.18	<b>AF<sub>lifetime</sub></b>					
3.19	<b>Intake Rate</b>	–	0.289	0.077	0.043	–
3.20	<b>(L/kg-day)</b>					
3.21	<b>Endpoints</b>	–	thyroid (E)	thyroid (E)	thyroid (E)	–

3.22 Subp. 3c. **Acetone.**

3.23 CAS number: 67-64-1

3.24 Year Proposed: ~~2010~~ Adopted: 2011

3.25 Volatility: Moderate

3.26		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
3.27	<b>HRL (µg/L)</b>	ND	9,000	8,000	4,000	NA
3.28	<b>RfD</b>	–	5.0	3.0	0.90	–
3.29	<b>(mg/kg-day)</b>					

4.1	<b>RSC</b>	–	0.5	0.2	0.2	–
4.2	<b>SF (per</b>	–	–	–	–	–
4.3	<b>mg/kg-day)</b>					
4.4	<b>ADAF or</b>	–	–	–	–	–
4.5	<b>AF<sub>lifetime</sub></b>					
4.6	<b>Intake Rate</b>	–	0.289	0.077	0.043	–
4.7	<b>(L/kg-day)</b>					
4.8	<b>Endpoints</b>	–	renal (kidney)	renal (kidney)	renal (kidney)	–
4.9			system	system,	system,	
4.10				hematological	hematological	
4.11				(blood) system	(blood) system	

4.12 Subp. 3d. 6-Acetyl-1,1,2,4,4,7-hexamethyltetraline (AHTN).

4.13 CAS number: 21145-77-7 or 1506-02-1

4.14 Year Adopted: 2013

4.15 Volatility: Moderate

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
4.16					
4.17	<u>HRL (µg/L)</u>	<u>ND</u>	<u>100</u>	<u>30</u>	<u>20</u>
4.18	<u>RfD</u>	<u>–</u>	<u>0.070</u>	<u>0.011</u>	<u>0.0037</u>
4.19	<u>(mg/kg-day)</u>				
4.20	<u>RSC</u>	<u>–</u>	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>
4.21	<u>SF (per</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>
4.22	<u>mg/kg-day)</u>				
4.23	<u>ADAF or</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>
4.24	<u>AF<sub>lifetime</sub></u>				
4.25	<u>Intake Rate</u>	<u>–</u>	<u>0.289</u>	<u>0.077</u>	<u>0.043</u>
4.26	<u>(L/kg-day)</u>				
4.27	<u>Endpoints</u>	<u>–</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>
4.28			<u>system</u>	<u>system</u>	<u>system</u>

4.29 Subp. 4. Alachlor.

- 5.1 CAS number: 15972-60-8  
 5.2 Year Established: ~~2008~~ Adopted: 2009  
 5.3 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
5.4 <b>HRL (µg/L)</b>	ND	200	30	5	NA
5.5 <b>RfD</b>	–	0.1	0.01	0.001	–
5.6 <b>(mg/kg-day)</b>					
5.7 <b>RSC</b>	–	0.5	0.2	0.2	–
5.8 <b>SF (per</b>	–	–	–	–	–
5.9 <b>mg/kg-day)</b>					
5.10 <b>ADAF or</b>	–	–	–	–	–
5.11 <b>AF</b>					
5.12 <b>lifetime</b>					
5.13 <b>Intake Rate</b>	–	0.289	0.077	0.043	–
5.14 <b>(L/kg-day)</b>					
5.15 <b>Endpoints</b>	–	renal (kidney) system	hepatic (liver) system, hematological (blood) system	hepatic (liver) system, hematological (blood) system	–
5.16					
5.17					
5.18					

5.19 **Subp. 5. Atrazine.**

- 5.20 CAS number: 1912-24-9  
 5.21 Year Established: ~~2008~~ Adopted: 2009  
 5.22 Volatility: Nonvolatile  
 5.23 MCL-based HRL: 3 µg/L

5.24 **Subp. 6. Benzene.**

- 5.25 CAS number: 71-43-2  
 5.26 Year Established: ~~2008~~ Adopted: 2009  
 5.27 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
5.28 <b>HRL (µg/L)</b>	10	10	3	3 (3)	2
5.29					

6.1	<b>RfD</b>	0.015	0.014	0.0013	(3)	–
6.2	<b>(mg/kg-day)</b>					
6.3	<b>RSC</b>	0.2	0.2	0.2	(3)	–
6.4	<b>SF (per</b>	–	–	–	–	0.055
6.5	<b>mg/kg-day)</b>					
6.6	<b>ADAF</b>	–	–	–	–	10 (ADAF <sub>&lt;2</sub> )
6.7						3 (ADAF <sub>2 to &lt;16</sub> )
6.8						1 (ADAF <sub>16+</sub> )
6.9	<b>Intake Rate</b>	0.289	0.289	0.077	(3)	0.137 (<2)
6.10	<b>(L/kg-day)</b>					0.047 (2 to <16)
6.11						0.039 (16+)
6.12	<b>Endpoints</b>	develop-	hemato-	hemato-	hemato-	cancer
6.13		mental	logical	logical	logical	
6.14			(blood)	(blood)	(blood)	
6.15			system,	system,	system,	
6.16			immune	immune	immune	
6.17			system	system	system	

6.18 Subp. 6a. Carbamazepine.6.19 CAS number: 298-46-46.20 Year Adopted: 20136.21 Volatility: Nonvolatile

6.22		<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
6.23	<b>HRL (µg/L)</b>	<u>40</u>	<u>40</u>	<u>40 (2)</u>	<u>40 (2)</u>	<u>NA</u>
6.24	<b>RfD</b>	<u>0.013</u>	<u>0.013</u>	<u>(2)</u>	<u>(2)</u>	<u>–</u>
6.25	<b>(mg/kg-day)</b>					
6.26	<b>RSC</b>	<u>0.8</u>	<u>0.8</u>	<u>(2)</u>	<u>(2)</u>	<u>–</u>
6.27	<b>SF (per</b>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>
6.28	<b>mg/kg-day)</b>					
6.29	<b>ADAF or</b>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>
6.30	<b>AF</b>					
6.31	<b>Intake Rate</b>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>–</u>

7.1	<b>(L/kg-day)</b>				
7.2	<b>Endpoints</b>	<u>develop- mental, nervous system</u>	<u>develop- mental,</u>	<u>develop- mental,</u>	<u>develop- mental,</u>
7.3			<u>hematological</u>	<u>hematological</u>	<u>hematological</u>
7.4			<u>(blood)</u>	<u>(blood)</u>	<u>(blood)</u>
7.5			<u>system,</u>	<u>system,</u>	<u>system,</u>
7.6			<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>
7.7			<u>system,</u>	<u>system,</u>	<u>system,</u>
7.8			<u>immune</u>	<u>immune</u>	<u>immune</u>
7.9			<u>system,</u>	<u>system,</u>	<u>system,</u>
7.10			<u>nervous</u>	<u>nervous</u>	<u>nervous</u>
7.11			<u>system, male</u>	<u>system, male</u>	<u>system, male</u>
7.12			<u>reproductive</u>	<u>reproductive</u>	<u>reproductive</u>
7.13	<u>system</u>	<u>system</u>	<u>system</u>		
7.14	<u>(E), female</u>	<u>(E), female</u>	<u>(E), female</u>		
7.15	<u>reproductive</u>	<u>reproductive</u>	<u>reproductive</u>		
7.16	<u>system (E),</u>	<u>system (E),</u>	<u>system (E),</u>		
7.17	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>		
7.18					

7.19 Subp. 6b. Carbon tetrachloride.

7.20 CAS number: 56-23-5

7.21 Year Adopted: 2013

7.22 Volatility: High

7.23	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
7.24	<u>100</u>	<u>3</u>	<u>3 (2)</u>	<u>3 (2)</u>	<u>1</u>
7.25	<u>0.18</u>	<u>0.0037</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
7.26	<u>(mg/kg-day)</u>				
7.27	<u>0.2</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
7.28	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.07</u>
7.29	<u>SF (per</u>				
7.30	<u>mg/kg-day)</u>				
7.31	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
7.32	<u>AF<sub>lifetime</sub></u>				<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
7.33					<u>1 (ADAF<sub>16+</sub>)</u>

8.1	<b>Intake Rate (L/kg-day)</b>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>0.137 (<u>&lt;2</u>)</u>
8.2						
8.3						<u>0.047 (<u>2 to &lt;16</u>)</u>
8.4						<u>0.039 (<u>16+</u>)</u>
8.5	<b>Endpoints</b>	<u>develop-</u> <u>mental,</u> <u>hepatic</u> <u>(liver)</u> <u>system</u>	<u>hepatic (liver)</u> <u>system</u>	<u>hepatic (liver)</u> <u>system</u>	<u>hepatic (liver)</u> <u>system</u>	<u>cancer</u>
8.6						
8.7						
8.8						
8.9						

8.10 Subp. 7. **Chloroform.**

8.11 CAS number: 67-66-3

8.12 Year Established: 2008 Adopted: 2009

8.13 Volatility: High

8.14		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
8.15	<b>HRL (µg/L)</b>	ND	30	30 (2)	30 (2)	NA
8.16	<b>RfD</b>	–	0.05	(2)	(2)	–
8.17	<b>(mg/kg-day)</b>					
8.18	<b>RSC</b>	–	0.2	(2)	(2)	–
8.19	<b>SF (per</b>	–	–	–	–	–
8.20	<b>mg/kg-day)</b>					
8.21	<b>ADAF or</b>	–	–	–	–	–
8.22	<b>AF<sub>lifetime</sub></b>					
8.23	<b>Intake Rate</b>	–	0.289	(2)	(2)	–
8.24	<b>(L/kg-day)</b>					
8.25	<b>Endpoints</b>	–	developmental, hepatic (liver) system, immune system	developmental, hepatic (liver) system, immune system, male reproductive system	developmental, hepatic (liver) system, immune system, male reproductive system	–
8.26						
8.27						
8.28						
8.29						
8.30						

8.31 Subp. 8. **Cyanazine.**



9.1 CAS number: 21725-46-2  
 9.2 Year Established: ~~2008~~ Adopted: 2009  
 9.3 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
9.4 HRL (µg/L)	2	2	2	1	NA
9.5 RfD 9.6 (mg/kg-day)	0.001	0.001	0.00063	0.00026	–
9.7 RSC	0.5	0.5	0.2	0.2	–
9.8 SF (per 9.9 mg/kg-day)	–	–	–	–	–
9.10 ADAF or 9.11 AF <sub>lifetime</sub>	–	–	–	–	–
9.12 Intake Rate 9.13 (L/kg-day)	0.289	0.289	0.077	0.043	–
9.14 Endpoints	developmental	developmental	hepatic (liver) system, renal (kidney) system	None	–

9.19 Subp. 8a. **Dichlorodifluoromethane.**

9.20 CAS number: 75-71-8  
 9.21 Year Proposed: ~~2010~~ Adopted: 2011  
 9.22 Volatility: High

	Acute	Short-term	Subchronic	Chronic	Cancer
9.23 HRL (µg/L)	ND	ND	ND	700	NA
9.24 RfD 9.25 (mg/kg-day)	–	–	–	0.15	–
9.26 RSC	–	–	–	0.2	–
9.27 SF (per 9.28 mg/kg-day)	–	–	–	–	–
9.29 ADAF or 9.30 AF <sub>lifetime</sub>	–	–	–	–	–

10.1	<b>Intake Rate</b>	–	–	–	0.043	–
10.2	<b>(L/kg-day)</b>					
10.3	<b>Endpoints</b>	–	–	–	None	–

10.4 Subp. 8b. 1,2-Dichloroethane.

10.5 CAS number: 107-06-2

10.6 Year Adopted: 2013

10.7 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
10.8						
10.9	<u>HRL (µg/L)</u>	<u>ND</u>	<u>200</u>	<u>200 (2)</u>	<u>60</u>	<u>1</u>
10.10	<u>RfD</u>	<u>=</u>	<u>0.23</u>	<u>(2)</u>	<u>0.012</u>	<u>=</u>
10.11	<u>(mg/kg-day)</u>					
10.12	<u>RSC</u>	<u>=</u>	<u>0.2</u>	<u>(2)</u>	<u>0.2</u>	<u>=</u>
10.13	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.091</u>
10.14	<u>mg/kg-day)</u>					
10.15	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
10.16	<u>AF<sub>lifetime</sub></u>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
10.17						<u>1 (ADAF<sub>16+</sub>)</u>
10.18						
10.19	<u>Intake Rate</u>	<u>=</u>	<u>0.289</u>	<u>(2)</u>	<u>0.043</u>	<u>0.137 (&lt;2)</u>
10.20	<u>(L/kg-day)</u>					<u>0.047 (2 to &lt;16)</u>
10.21						<u>0.039 (16+)</u>
10.22						
10.23	<u>Endpoints</u>	<u>=</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>renal (kidney)</u>	<u>cancer</u>
10.24			<u>system</u>	<u>system</u>	<u>system,</u>	
10.25					<u>hepatic (liver)</u>	
10.26					<u>system</u>	

10.27 Subp. 8c. trans-1,2-Dichloroethene.

10.28 CAS number: 156-60-5

10.29 Year Adopted: 2013

10.30 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
11.1						
11.2	<u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>200</u>	<u>40</u>	<u>NA</u>
11.3	<u>RfD</u>	<u>—</u>	<u>—</u>	<u>0.091</u>	<u>0.0091</u>	<u>—</u>
11.4	<u>(mg/kg-day)</u>					
11.5	<u>RSC</u>	<u>—</u>	<u>—</u>	<u>0.2</u>	<u>0.2</u>	<u>—</u>
11.6	<u>SF (per</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
11.7	<u>mg/kg-day)</u>					
11.8	<u>ADAF or</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
11.9	<u>AF<sub>lifetime</sub></u>					
11.10	<u>Intake Rate</u>	<u>—</u>	<u>—</u>	<u>0.077</u>	<u>0.043</u>	<u>—</u>
11.11	<u>(L/kg-day)</u>					
11.12	<u>Endpoints</u>	<u>—</u>	<u>—</u>	<u>immune system</u>	<u>immune system</u>	<u>—</u>

11.13 Subp. 8b. 8d. 1,1-Dichloroethylene.

11.14 CAS number: 75-35-4

11.15 Year Proposed: ~~2010~~ Adopted: 2011

11.16 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
11.17						
11.18	<u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>200</u>	<u>200</u>	<u>NA</u>
11.19	<u>RfD</u>	<u>—</u>	<u>—</u>	<u>0.090</u>	<u>0.046</u>	<u>—</u>
11.20	<u>(mg/kg-day)</u>					
11.21	<u>RSC</u>	<u>—</u>	<u>—</u>	<u>0.2</u>	<u>0.2</u>	<u>—</u>
11.22	<u>SF (per</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
11.23	<u>mg/kg-day)</u>					
11.24	<u>ADAF or</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
11.25	<u>AF<sub>lifetime</sub></u>					
11.26	<u>Intake Rate</u>	<u>—</u>	<u>—</u>	<u>0.077</u>	<u>0.043</u>	<u>—</u>
11.27	<u>(L/kg-day)</u>					
11.28	<u>Endpoints</u>	<u>—</u>	<u>—</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>—</u>
11.29				<u>system</u>	<u>system</u>	

11.30 Subp. 9. cis 1,2-Dichloroethylene.

- 12.1 CAS number: 156-59-2  
 12.2 Year Established: ~~2008~~ Adopted 2009  
 12.3 Volatility: High

	Acute	Short-term	Subchronic	Chronic	Cancer	
12.4						
12.5	HRL (µg/L)	ND	70	70 (2)	50	NA
12.6	RfD	–	0.097	(2)	0.011	–
12.7	(mg/kg-day)					
12.8	RSC	–	0.2	(2)	0.2	–
12.9	SF (per	–	–	–	–	–
12.10	mg/kg-day)					
12.11	ADAF or	–	–	–	–	–
12.12	AF <sub>lifetime</sub>					
12.13	Intake Rate	–	0.289	(2)	0.043	–
12.14	(L/kg-day)					
12.15	Endpoints	–	hematological	hematological	hematological	–
12.16			(blood) system	(blood) system	(blood) system	

12.17 Subp. 10. **Dichloromethane.**

- 12.18 CAS number: 75-09-2  
 12.19 Year Established: ~~2008~~ Adopted: 2009  
 12.20 Volatility: High  
 12.21 MCL-based HRL: 5 µg/L

12.22 Subp. 11. **Dieldrin.**

- 12.23 CAS number: 60-57-1  
 12.24 Year Established: ~~2008~~ Adopted: 2009  
 12.25 Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer	
12.26						
12.27	HRL (µg/L)	0.2	0.2	0.2 (2)	0.2	0.006
12.28	RfD	0.0001	0.0001	(2)	0.00005	–
12.29	(mg/kg-day)					

13.1	<b>RSC</b>	0.5	0.5	(2)	0.2	–
13.2	<b>SF (per</b>	–	–	–	–	16
13.3	<b>mg/kg-day)</b>					
13.4	<b>AF</b> <small>lifetime</small>	–	–	–	–	2.5
13.5	<b>Intake Rate</b>	0.289	0.289	(2)	0.043	0.043
13.6	<b>(L/kg-day)</b>					
13.7	<b>Endpoints</b>	developmental	developmental, immune system, nervous system	developmental, immune system, nervous system	hepatic (liver) system, nervous system	cancer
13.8						
13.9						
13.10						
13.11						

13.12 Subp. 11a. N,N-Diethyl-meta-toluamide (DEET).

13.13 CAS number: 134-62-3

13.14 Year Adopted: 2013

13.15 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
13.16						
13.17	<u>HRL (µg/L)</u>	<u>ND</u>	<u>200</u>	<u>200 (2)</u>	<u>200 (2)</u>	<u>NA</u>
13.18	<u>RfD</u>	<u>=</u>	<u>0.23</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
13.19	<u>(mg/kg-day)</u>					
13.20	<u>RSC</u>	<u>=</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
13.21	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
13.22	<u>mg/kg-day)</u>					
13.23	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
13.24	<u>AF</u> <small>lifetime</small>					
13.25	<u>Intake Rate</u>	<u>=</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
13.26	<u>(L/kg-day)</u>					
13.27	<u>Endpoints</u>	<u>=</u>	<u>developmental,</u>	<u>developmental,</u>	<u>developmental,</u>	<u>=</u>
13.28			<u>nervous system</u>	<u>nervous system</u>	<u>nervous system</u>	

13.29 Subp. 11b. 1,4-Dioxane.

14.1 CAS number: 123-91-1

14.2 Year Adopted: 2013

14.3 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
14.4					
14.5	<u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>300</u>	<u>1</u>
14.6	<u>RfD</u>	<u>=</u>	<u>=</u>	<u>0.12</u>	<u>=</u>
14.7	<u>(mg/kg-day)</u>				
14.8	<u>RSC</u>	<u>=</u>	<u>=</u>	<u>0.2</u>	<u>=</u>
14.9	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.1</u>
14.10	<u>mg/kg-day)</u>				
14.11	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
14.12	<u>AF<sub>lifetime</sub></u>				<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
14.13					<u>1 (ADAF<sub>16+</sub>)</u>
14.14					
14.15	<u>Intake Rate</u>	<u>=</u>	<u>=</u>	<u>0.077</u>	<u>0.137 (&lt;2)</u>
14.16	<u>(L/kg-day)</u>				<u>0.047 (2 to &lt;16)</u>
14.17					<u>0.039 (16+)</u>
14.18	<u>Endpoints</u>	<u>=</u>	<u>=</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>
14.19				<u>system, renal</u>	<u>system, renal</u>
14.20				<u>(kidney)</u>	<u>(kidney)</u>
14.21				<u>system,</u>	<u>system,</u>
14.22				<u>respiratory</u>	<u>respiratory</u>
14.23				<u>system</u>	<u>system</u>

14.24 **Subp. 12. Di-(2-ethylhexyl) phthalate.**

14.25 CAS number: 117-81-7

14.26 Year Established: 2008 Adopted: 2009

14.27 Volatility: Moderate

14.28 MCL-based HRL: 6 µg/L

14.29 **Subp. 12a. Ethylbenzene.**

- 15.1 CAS number: 100-41-4  
 15.2 Year Proposed: ~~2010~~ Adopted: 2011  
 15.3 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
15.4						
15.5	<b>HRL (µg/L)</b>	ND	50	50 (2)	50 (2)	NA
15.6	<b>RfD</b>	–	0.075	(2)	(2)	–
15.7	<b>(mg/kg-day)</b>					
15.8	<b>RSC</b>	–	0.2	(2)	(2)	–
15.9	<b>SF (per</b>	–	–	–	–	–
15.10	<b>mg/kg-day)</b>					
15.11	<b>ADAF or</b>	–	–	–	–	–
15.12	<b>AF<sub>lifetime</sub></b>					
15.13	<b>Intake Rate</b>	–	0.289	(2)	(2)	–
15.14	<b>(L/kg-day)</b>					
15.15	<b>Endpoints</b>	–	hepatic (liver) system, renal (kidney) system	hepatic (liver) system, renal (kidney) system	hepatic (liver) system, renal (kidney) system	–
15.16						
15.17						
15.18						

15.19 Subp. 12b. **Ethylene glycol.**

- 15.20 CAS number: 107-21-1  
 15.21 Year Proposed: ~~2010~~ Adopted: 2011  
 15.22 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
15.23						
15.24	<b>HRL (µg/L)</b>	4,000	4,000	2,000	2,000	NA
15.25	<b>RfD</b>	0.76	0.76	0.72	0.50	–
15.26	<b>(mg/kg-day)</b>					
15.27	<b>RSC</b>	0.2	0.2	0.2	0.2	–
15.28	<b>SF (per</b>	–	–	–	–	–
15.29	<b>mg/kg-day)</b>					
15.30	<b>ADAF or</b>	–	–	–	–	–
15.31	<b>AF<sub>lifetime</sub></b>					

16.1	<b>Intake Rate (L/kg-day)</b>	0.043	0.043	0.077	0.043	–
16.2						
16.3	<b>Endpoints</b>	developmental	developmental	renal (kidney) system, developmental	renal (kidney) system, developmental	–
16.4						
16.5						

16.6 Subp. 12c. **Metolachlor and S-Metolachlor.**

16.7 CAS number: 51218-45-2; 87392-12-9

16.8 Year Proposed: ~~2010~~ Adopted: 2011

16.9 Volatility: Nonvolatile

16.10		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
16.11	<b>HRL (µg/L)</b>	400	400	300	300 (3)	NA
16.12	<b>RfD (mg/kg-day)</b>	0.24	0.24	0.097	(3)	–
16.13						
16.14	<b>RSC</b>	0.5	0.5	0.2	(3)	–
16.15	<b>SF (per mg/kg-day)</b>	–	–	–	–	–
16.16						
16.17	<b>ADAF or AF<sub>lifetime</sub></b>	–	–	–	–	–
16.18						
16.19	<b>Intake Rate (L/kg-day)</b>	0.289	0.289	0.077	(3)	–
16.20						
16.21	<b>Endpoints</b>	developmental	developmental	none	none	–

16.22 Subp. 12d. **Metolachlor ESA.**

16.23 CAS number: 171118-09-5

16.24 Year Proposed: ~~2010~~ Adopted: 2011

16.25 Volatility: Nonvolatile

16.26		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
16.27	<b>HRL (µg/L)</b>	ND	ND	4,000	800	NA
16.28	<b>RfD (mg/kg-day)</b>	–	–	1.7	0.17	–
16.29						



17.1	<b>RSC</b>	–	–	0.2	0.2	–
17.2	<b>SF (per</b>	–	–	–	–	–
17.3	<b>mg/kg-day)</b>					
17.4	<b>ADAF or</b>	–	–	–	–	–
17.5	<b>AF<sub>lifetime</sub></b>					
17.6	<b>Intake Rate</b>	–	–	0.077	0.043	–
17.7	<b>(L/kg-day)</b>					
17.8	<b>Endpoints</b>	–	–	hepatic (liver)	hepatic (liver)	–
17.9				system	system	

17.10 **Subp. 12e. Metolachlor OXA.**

17.11 CAS number: 152019-73-3

17.12 Year Proposed: ~~2010~~ Adopted: 2011

17.13 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
17.14						
17.15	<b>HRL (µg/L)</b>	ND	3,000	3,000 (2)	800	NA
17.16	<b>RfD</b>	–	1.7	(2)	0.17	–
17.17	<b>(mg/kg-day)</b>					
17.18	<b>RSC</b>	–	0.5	(2)	0.2	–
17.19	<b>SF (per</b>	–	–	–	–	–
17.20	<b>mg/kg-day)</b>					
17.21	<b>ADAF or</b>	–	–	–	–	–
17.22	<b>AF<sub>lifetime</sub></b>					
17.23	<b>Intake Rate</b>	–	0.289	(2)	0.043	–
17.24	<b>(L/kg-day)</b>					
17.25	<b>Endpoints</b>	–	none	none	none	–

17.26 **Subp. 12f. Metribuzin.**

17.27 CAS number: 21087-64-9

17.28 Year Adopted: 2013

17.29 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
18.1						
18.2	<u>HRL (µg/L)</u>	<u>30</u>	<u>10</u>	<u>10 (2)</u>	<u>10 (2)</u>	<u>NA</u>
18.3	<u>RfD</u>	<u>0.016</u>	<u>0.006</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
18.4	<u>(mg/kg-day)</u>					
18.5	<u>RSC</u>	<u>0.5</u>	<u>0.5</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
18.6	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
18.7	<u>mg/kg-day)</u>					
18.8	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
18.9	<u>AF<sub>lifetime</sub></u>					
18.10	<u>Intake Rate</u>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
18.11	<u>(L/kg-day)</u>					
18.12	<u>Endpoints</u>	<u>developmental,</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>=</u>
18.13		<u>nervous system</u>				

18.14 Subp. 12g. Naphthalene.

18.15 CAS number: 91-20-3

18.16 Year Adopted: 2013

18.17 Volatility: Moderate

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
18.18						
18.19	<u>HRL (µg/L)</u>	<u>70</u>	<u>70</u>	<u>70 (2)</u>	<u>70</u>	<u>NA</u>
18.20	<u>RfD</u>	<u>0.038</u>	<u>0.038</u>	<u>(2)</u>	<u>0.016</u>	<u>=</u>
18.21	<u>(mg/kg-day)</u>					
18.22	<u>RSC</u>	<u>0.5</u>	<u>0.5</u>	<u>(2)</u>	<u>0.2</u>	<u>=</u>
18.23	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
18.24	<u>mg/kg-day)</u>					
18.25	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
18.26	<u>AF<sub>lifetime</sub></u>					
18.27	<u>Intake Rate</u>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>0.043</u>	<u>=</u>
18.28	<u>(L/kg-day)</u>					
18.29	<u>Endpoints</u>	<u>nervous system</u>	<u>nervous system</u>	<u>nervous system</u>	<u>nervous</u>	<u>=</u>
18.30					<u>system, spleen</u>	

18.31 Subp. 13. Nitrate (as N).

19.1 CAS number: 14797-55-8  
 19.2 Year Established: ~~2008~~ Adopted: 2009  
 19.3 Volatility: Nonvolatile  
 19.4 MCL-based HRL: 10,000 µg/L

19.5 Subp. 14. **Pentachlorophenol.**

19.6 CAS number: 87-86-5  
 19.7 Year Established: ~~2008~~ Adopted: 2009  
 19.8 Volatility: Nonvolatile  
 19.9 MCL-based HRL: 1 µg/L

19.10 Subp. 14a. **Perfluorobutane sulfonate (PFBS).**

19.11 CAS number: 375-73-5  
 19.12 Year Proposed: ~~2010~~ Adopted: 2011  
 19.13 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
19.14						
19.15	<b>HRL (µg/L)</b>	ND	ND	9	7	NA
19.16	<b>RfD</b>	–	–	0.0042	0.0014	–
19.17	<b>(mg/kg-day)</b>					
19.18	<b>RSC</b>	–	–	0.5	0.2	–
19.19	<b>SF (per</b>	–	–	–	–	–
19.20	<b>mg/kg-day)</b>					
19.21	<b>ADAF or</b>	–	–	–	–	–
19.22	<b>AF<sub>lifetime</sub></b>					
19.23	<b>Intake Rate</b>	–	–	0.245	0.043	–
19.24	<b>(L/kg-day)</b>					
19.25	<b>Endpoints</b>	–	–	hepatic (liver)	hepatic (liver)	–
19.26				system,	system,	
19.27				hematological	hematological	
19.28				(blood) system,	(blood) system,	
19.29				renal (kidney)	renal (kidney)	
19.30				system	system	

20.1 Subp. 14b. **Perfluorobutyrate (PFBA).**

20.2 CAS number: 375-22-4

20.3 Year Proposed: ~~2010~~ Adopted: 2011

20.4 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
20.5						
20.6	<b>HRL (µg/L)</b>	ND	7	7 (2)	7 (2)	NA
20.7	<b>RfD</b>	–	0.0038	(2)	(2)	–
20.8	<b>(mg/kg-day)</b>					
20.9	<b>RSC</b>	–	0.5	(2)	(2)	–
20.10	<b>SF (per</b>	–	–	–	–	–
20.11	<b>mg/kg-day)</b>					
20.12	<b>ADAF or</b>	–	–	–	–	–
20.13	<b>AF<sub>lifetime</sub></b>					
20.14	<b>Intake Rate</b>	–	0.289	(2)	(2)	–
20.15	<b>(L/kg-day)</b>					
20.16	<b>Endpoints</b>	–	hepatic (liver)	hepatic (liver)	hepatic (liver)	–
20.17			system <sub>2</sub>	system <sub>2</sub>	system <sub>2</sub>	
20.18			thyroid (E)	thyroid (E)	thyroid (E)	

20.19 Subp. 15. **Perfluorooctane sulfonate (PFOS) and salts.**20.20 CAS number: 1763-23-1; 29081-56-9; 2795-39-3; 70225-14-8; and  
20.21 29457-72-520.22 Year Established: ~~2008~~ Adopted: 2009

20.23 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
20.24						
20.25	<b>HRL (µg/L)</b>	ND	ND	ND	0.3	NA
20.26	<b>RfD</b>	–	–	–	0.00008	–
20.27	<b>(mg/kg-day)</b>					
20.28	<b>RSC</b>	–	–	–	0.2	–
20.29	<b>SF (per</b>	–	–	–	–	–
20.30	<b>mg/kg-day)</b>					

21.1	<b>ADAF or</b>	–	–	–	–	–
21.2	<b>AF<sub>lifetime</sub></b>					
21.3	<b>Intake Rate</b>	–	–	–	0.049	–
21.4	<b>(L/kg-day)</b>					
21.5	<b>Endpoints</b>	–	–	–	developmental,	–
21.6					hepatic (liver)	
21.7					system, thyroid	
21.8					(E)	

21.9 **Subp. 16. Perfluorooctanoic acid (PFOA) and salts.**

21.10 CAS number: 335-67-1; 3825-26-1; 2395-00-8; 335-93-3; and 335-95-5

21.11 Year Established: ~~2008~~ Adopted: 2009

21.12 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
21.13						
21.14	<b>HRL (µg/L)</b>	ND	ND	ND	0.3	NA
21.15	<b>RfD</b>	–	–	–	0.000077	–
21.16	<b>(mg/kg-day)</b>					
21.17	<b>RSC</b>	–	–	–	0.2	–
21.18	<b>SF (per</b>	–	–	–	–	–
21.19	<b>mg/kg-day)</b>					
21.20	<b>ADAF or</b>	–	–	–	–	–
21.21	<b>AF<sub>lifetime</sub></b>					
21.22	<b>Intake Rate</b>	–	–	–	0.053	–
21.23	<b>(L/kg-day)</b>					
21.24	<b>Endpoints</b>	–	–	–	developmental,	–
21.25					hepatic (liver)	
21.26					system, immune	
21.27					system	

21.28 **Subp. 17. Simazine.**

21.29 CAS number: 122-34-9

21.30 Year Established: ~~2008~~ Adopted: 2009

22.1 Volatility: Nonvolatile  
 22.2 MCL-based HRL: 4 µg/L

22.3 Subp. 18. **1,1,2,2-Tetrachloroethylene.**

22.4 CAS number: 127-18-4  
 22.5 Year Established: ~~2008~~ Adopted: 2009  
 22.6 Volatility: High  
 22.7 MCL-based HRL: 5 µg/L

22.8 Subp. 18a. **Toluene.**

22.9 CAS number: 108-88-3  
 22.10 Year Proposed: ~~2010~~ Adopted: 2011  
 22.11 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
22.12						
22.13	<b>HRL (µg/L)</b>	ND	200	200 (2)	200 (2)	NA
22.14	<b>RfD</b>	–	0.22	(2)	(2)	–
22.15	<b>(mg/kg-day)</b>					
22.16	<b>RSC</b>	–	0.2	(2)	(2)	–
22.17	<b>SF (per</b>	–	–	–	–	–
22.18	<b>mg/kg-day)</b>					
22.19	<b>ADAF or</b>	–	–	–	–	–
22.20	<b>AF<sub>lifetime</sub></b>					
22.21	<b>Intake Rate</b>	–	0.289	(2)	(2)	–
22.22	<b>(L/kg-day)</b>					
22.23	<b>Endpoints</b>	–	immune system, nervous system	immune system, nervous system	immune system, nervous system	–
22.24						

22.25 Subp. 18b. **1,2,4-Trichlorobenzene.**

22.26 CAS number: 120-82-1  
 22.27 Year Adopted: 2013  
 22.28 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
23.1						
23.2	<u>HRL (µg/L)</u>	<u>ND</u>	<u>100</u>	<u>100 (2)</u>	<u>100</u>	<u>4</u>
23.3	<u>RfD</u>	<u>—</u>	<u>0.17</u>	<u>(2)</u>	<u>0.021</u>	<u>—</u>
23.4	<u>(mg/kg-day)</u>					
23.5	<u>RSC</u>	<u>—</u>	<u>0.2</u>	<u>(2)</u>	<u>0.2</u>	<u>—</u>
23.6	<u>SF (per</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>0.029</u>
23.7	<u>mg/kg-day)</u>					
23.8	<u>ADAF or</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
23.9	<u>AF<sub>lifetime</sub></u>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
23.10						<u>1 (ADAF<sub>16+</sub>)</u>
23.11						
23.12	<u>Intake Rate</u>	<u>—</u>	<u>0.289</u>	<u>(2)</u>	<u>0.043</u>	<u>0.137 (&lt;2)</u>
23.13	<u>(L/kg-day)</u>					<u>0.047 (2 to &lt;16)</u>
23.14						<u>0.039 (16+)</u>
23.15	<u>Endpoints</u>	<u>—</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>cancer</u>
23.16			<u>system,</u>	<u>system,</u>	<u>system,</u>	
23.17			<u>adrenal (E),</u>	<u>adrenal (E),</u>	<u>adrenal (E),</u>	
23.18			<u>hemato-</u>	<u>hemato-</u>	<u>renal (kidney)</u>	
23.19			<u>logical</u>	<u>logical</u>	<u>system</u>	
23.20			<u>(blood)</u>	<u>(blood)</u>		
23.21			<u>system</u>	<u>system</u>		

23.22 Subp. 19. **1,1,1-Trichloroethane.**

23.23 CAS number: 71-55-6

23.24 Year Established: 2008 Adopted: 2009

23.25 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
23.26						
23.27	<u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>20,000</u>	<u>9,000</u>	<u>NA</u>
23.28	<u>RfD</u>	<u>—</u>	<u>—</u>	<u>7</u>	<u>2</u>	<u>—</u>
23.29	<u>(mg/kg-day)</u>					
23.30	<u>RSC</u>	<u>—</u>	<u>—</u>	<u>0.2</u>	<u>0.2</u>	<u>—</u>

24.1	<b>SF (per mg/kg-day)</b>	–	–	–	–	–
24.2						
24.3	<b>ADAF or AF<sub>lifetime</sub></b>	–	–	–	–	–
24.4						
24.5	<b>Intake Rate (L/kg-day)</b>	–	–	0.077	0.043	–
24.6						
24.7	<b>Endpoints</b>	–	–	hepatic (liver) system, male reproductive system	hepatic (liver) system, male reproductive system	–
24.8						
24.9						
24.10						
24.11						

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

24.13 CAS number: 79-01-6

24.14 Year Established: 2008 Adopted: 2009

24.15 Volatility: High

24.16 MCL-based HRL: 5 µg/L

24.17 Subp. 21. **2(2,4,5-Trichlorophenoxy)propionic acid (2,4,5-TP or Silvex).**

24.18 CAS number: 93-72-1

24.19 Year Established: 2008 Adopted: 2009

24.20 Volatility: Nonvolatile

24.21 MCL-based HRL: 50 µg/L

24.22 Subp. 21a. **1,2,3-Trichloropropane.**

24.23 CAS number: 96-18-4

24.24 Year Adopted: 2013

24.25 Volatility: Moderate

24.26	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
24.27	<u>7</u>	<u>7</u>	<u>7 (2)</u>	<u>7 (2)</u>	<u>0.003</u>
24.28	<u>0.0042</u>	<u>0.0042</u>	<u>(2)</u>	<u>(2)</u>	=
24.29					



25.1	<b>RSC</b>	<u>0.5</u>	<u>0.5</u>	<u>(2)</u>	<u>(2)</u>	<u>—</u>
25.2	<b>SF (per</b>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>30</u>
25.3	<b>mg/kg-day)</b>					
25.4	<b>ADAF or</b>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
25.5	<b>AF<sub>lifetime</sub></b>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
25.6						<u>1 (ADAF<sub>16+</sub>)</u>
25.7						
25.8	<b>Intake Rate</b>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>0.137 (<sub>&lt;2</sub>)</u>
25.9	<b>(L/kg-day)</b>					<u>0.047 (<sub>2 to &lt;16</sub>)</u>
25.10						<u>0.039 (<sub>16+</sub>)</u>
25.11	<b>Endpoints</b>	<u>develop-</u>	<u>develop-</u>	<u>develop-</u>	<u>develop-</u>	<u>cancer</u>
25.12		<u>mental</u>	<u>mental</u>	<u>mental</u>	<u>mental</u>	

25.13 Subp. 22. **1,3,5-Trimethylbenzene.**

25.14 CAS number: 108-67-8

25.15 Year Established: 2008 Adopted: 2009

25.16 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
25.17						
25.18	<b>HRL (µg/L)</b>	ND	100	100 (2)	100 (2)	NA
25.19	<b>RfD</b>	ND	0.14	(2)	(2)	—
25.20	<b>(mg/kg-day)</b>					
25.21	<b>RSC</b>	—	0.2	(2)	(2)	—
25.22	<b>SF (per</b>	—	—	—	—	—
25.23	<b>mg/kg-day)</b>					
25.24	<b>ADAF or</b>	—	—	—	—	—
25.25	<b>AF<sub>lifetime</sub></b>					

26.1	<b>Intake Rate</b>	–	0.289	(2)	(2)	–
26.2	<b>(L/kg-day)</b>					
26.3	<b>Endpoints</b>	–	hepatic (liver) system	hepatic (liver) system; renal (kidney) system	hepatic (liver) system; renal system (kidney) system	–
26.4						
26.5						
26.6						
26.7						
26.8						

26.9 Subp. 22a. Tris(2-chloroethyl) phosphate.

26.10 CAS number: 115-96-8

26.11 Year Adopted: 2013

26.12 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
26.13					
26.14	<u>HRL (µg/L)</u>	<u>ND</u>	<u>300</u>	<u>200 (3)</u>	<u>5</u>
26.15	<u>RfD</u>	<u>–</u>	<u>0.15</u>	<u>(3)</u>	<u>–</u>
26.16	<u>(mg/kg-day)</u>				
26.17	<u>RSC</u>	<u>–</u>	<u>0.5</u>	<u>(3)</u>	<u>–</u>
26.18	<u>SF (per</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>0.02</u>
26.19	<u>mg/kg-day)</u>				
26.20	<u>ADAF or</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
26.21	<u>AF<sub>lifetime</sub></u>				<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
26.22					<u>1 (ADAF<sub>16+</sub>)</u>
26.23					
26.24	<u>Intake Rate</u>	<u>–</u>	<u>0.289</u>	<u>(3)</u>	<u>0.137 (&lt;2)</u>
26.25	<u>(L/kg-day)</u>				<u>0.047 (2 to &lt;16)</u>
26.26					<u>0.039 (16+)</u>
26.27	<u>Endpoints</u>	<u>–</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>cancer</u>
26.28			<u>system,</u>	<u>system</u>	
26.29			<u>nervous</u>	<u>system</u>	
26.30			<u>system,</u>		
26.31			<u>develop-</u>		
26.32			<u>mental</u>		

27.1 Subp. 23. **Vinyl Chloride.**

27.2 CAS number: 75-01-4

27.3 Year Established: ~~2008~~ Adopted: 2009

27.4 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
27.5						
27.6	<b>HRL (µg/L)</b>	ND	ND	80	10	0.2
27.7	<b>RfD</b>	–	–	0.03	0.003	–
27.8	<b>(mg/kg-day)</b>					
27.9	<b>RSC</b>	–	–	0.2	0.2	–
27.10	<b>SF (per</b>	–	–	–	–	1.4
27.11	<b>mg/kg-day)</b>					
27.12	<b>AF</b> <small>lifetime</small>	–	–	–	–	1
27.13	<b>Intake Rate</b>	–	–	0.077	0.043	0.043
27.14	<b>(L/kg-day)</b>					
27.15	<b>Endpoints</b>	–	–	hepatic (liver)	hepatic	cancer
27.16				system	(liver)	
27.17					system	

27.18 Subp. 23a. **Xylenes.**

27.19 CAS number: 1330-20-7

27.20 Year Proposed: ~~2010~~ Adopted: 2011

27.21 Volatility: High

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
27.22						
27.23	<b>HRL (µg/L)</b>	800	300	300 (2)	300 (2)	NA
27.24	<b>RfD</b>	1.2	0.5	(2)	(2)	–
27.25	<b>(mg/kg-day)</b>					
27.26	<b>RSC</b>	0.2	0.2	(2)	(2)	–
27.27	<b>SF (per</b>	–	–	–	–	–
27.28	<b>mg/kg-day)</b>					
27.29	<b>ADAF or</b>	–	–	–	–	–
27.30	<b>AF</b> <small>lifetime</small>					

28.1	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	–
28.2	<b>(L/kg-day)</b>					
28.3	<b>Endpoints</b>	nervous system	nervous system	renal (kidney)	renal	–
28.4				system,	(kidney)	
28.5				nervous	system,	
28.6				system	nervous	
28.7					system	

28.8 [For text of subp 24, see M.R.]

28.9 **REPEALER.** Minnesota Rules, part 4717.7500, subparts 23, 40, 42, 66, 66a, and 86, are

28.10 repealed.