

1.1 **Department of Health**

1.2 **Proposed Permanent Rules Relating to Health Risk Limits for Groundwater Standards**

1.3 **4717.7860 HEALTH RISK LIMITS TABLE.**

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

1.7 A. the chemical name;

1.8 B. the CAS number;

1.9 C. the year the HRL was adopted;

1.10 D. the volatility classification;

1.11 E. any noncancer HRL;

1.12 F. any cancer HRL;

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

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

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

1.17 J. the health endpoints.

1.18 Subp. 2. **Explanation of table in this part.**

1.19 A. "--" symbol means not relevant.

1.20 B. "NA" means not applicable.

1.21 C. "ND" means not derived due to absence or paucity of toxicity information.

1.22 D. "None" means not applicable for inclusion in the health risk index.

E. The following explanations in subitems (1) to (3) apply where noted:

(1) The acute HRL value is less than the calculated HRL. To be protective of acute exposures, the HRL is set equal to the acute HRL value.

(2) The short-term HRL value is less than the calculated HRL. To be protective of short-term exposures, the HRL is set equal to the short-term HRL value.

(3) The subchronic HRL value is less than the calculated HRL. To be protective of subchronic exposures, the HRL is set equal to the subchronic HRL value.

Subp. 2a. **Acenaphthene.**

CAS number: 83-32-9

Year Adopted: 2018

Volatility: Moderate

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	ND	200	100	NA
<b>RfD (mg/kg-day)</b>	--	--	0.070	0.021	--
<b>RSC</b>	--	--	0.2	0.2	--
<b>SF (per mg/kg-day)</b>	--	--	--	--	--
<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	--
<b>Intake Rate (L/kg-day)</b>	--	--	0.070	0.044	--
<b>Endpoints</b>	--	--	adrenal, hepatic (liver) system	adrenal, hepatic (liver) system	--

3.1 Subp. 2b. **Acetaminophen.**

3.2 CAS number: 103-90-2

3.3 Year Adopted: 2015

3.4 Volatility: Nonvolatile

3.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
3.6	<b>HRL (µg/L)</b>	200	200	200 (2)	200 (2)	NA
3.7	<b>RfD</b>	0.25	0.25	(2)	(2)	--
3.8	<b>(mg/kg-day)</b>					
3.9	<b>RSC</b>	0.2	0.2	(2)	(2)	--
3.10	<b>SF (per</b>	--	--	--	--	--
3.11	<b>mg/kg-day)</b>					
3.12	<b>ADAF or</b>	--	--	--	--	--
3.13	<b>AF<sub>lifetime</sub></b>					
3.14	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	--
3.15	<b>(L/kg-day)</b>					
3.16	<b>Endpoints</b>	hepatic (liver)	hepatic (liver)	hepatic (liver)	hepatic (liver)	--
3.17		system	system	system	system	

3.18 Subp. 3. **Acetochlor.**

3.19 CAS number: 34256-82-1

3.20 Year Adopted: 2018

3.21 Volatility: Nonvolatile

3.22		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
3.23	<b>HRL (µg/L)</b>	ND	30	30	20	NA
3.24	<b>RfD</b>	--	0.016	0.012	0.0039	--
3.25	<b>(mg/kg-day)</b>					
3.26	<b>RSC</b>	--	0.5	0.2	0.2	--
3.27	<b>SF (per</b>	--	--	--	--	--
3.28	<b>mg/kg-day)</b>					

4.1	<b>ADAF or</b>	--	--	--	--
4.2	<b>AF<sub>lifetime</sub></b>				
4.3	<b>Intake Rate</b>	--	0.285	0.070	0.044
4.4	<b>(L/kg-day)</b>				--
4.5	<b>Endpoints</b>	--	developmental, hepatic (liver) system, thyroid (E)	hepatic (liver) system, male reproductive system, nervous system, renal (kidney) system	hepatic (liver) system, male reproductive system, nervous system, renal (kidney) system, respiratory system
4.6					--
4.7					
4.8					
4.9					
4.10					
4.11					
4.12					
4.13					

4.14 Subp. 3a. **Acetochlor ESA.**

4.15 CAS number: 187022-11-3

4.16 Year Adopted: 2018

4.17 Volatility: Nonvolatile

4.18		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
4.19	<b>HRL (µg/L)</b>	ND	500	500	300	NA
4.20	<b>RfD</b>	--	0.29	0.19	0.056	--
4.21	<b>(mg/kg-day)</b>					
4.22	<b>RSC</b>	--	0.5	0.2	0.2	--
4.23	<b>SF (per</b>	--	--	--	--	--
4.24	<b>mg/kg-day)</b>					
4.25	<b>ADAF or</b>	--	--	--	--	--
4.26	<b>AF<sub>lifetime</sub></b>					
4.27	<b>Intake Rate</b>	--	0.285	0.070	0.044	--
4.28	<b>(L/kg-day)</b>					
4.29	<b>Endpoints</b>	--	thyroid (E)	male reproductive system, thyroid (E)	male reproductive system, thyroid (E)	--
4.30						
4.31						
4.32						

5.1 Subp. 3b. **Acetochlor OXA.**

5.2 CAS number: 184992-44-4

5.3 Year Adopted: 2018

5.4 Volatility: Nonvolatile

5.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
5.6	<b>HRL (µg/L)</b>	ND	100	100 (2)	90	NA
5.7	<b>RfD</b>	--	0.081	(2)	0.019	--
5.8	<b>(mg/kg-day)</b>					
5.9	<b>RSC</b>	--	0.5	(2)	0.2	--
5.10	<b>SF (per</b>	--	--	--	--	--
5.11	<b>mg/kg-day)</b>					
5.12	<b>ADAF or</b>	--	--	--	--	--
5.13	<b>AF<sub>lifetime</sub></b>					
5.14	<b>Intake Rate</b>	--	0.285	(2)	0.044	--
5.15	<b>(L/kg-day)</b>					
5.16	<b>Endpoints</b>	--	thyroid (E)	thyroid (E)	thyroid (E)	--

5.17 Subp. 3c. **Acetone.**

5.18 CAS number: 67-64-1

5.19 Year Adopted: ~~2011~~ 2021

5.20 Volatility: Moderate

5.21		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
5.22	<b>HRL (µg/L)</b>	ND	<del>9,000</del> <u>5,000</u>	<del>8,000</del> <u>5,000</u> (2)	<del>4,000</del> <u>3,000</u>	NA
5.23	<b>RfD</b>	--	<del>5.0</del> <u>3.1</u>	<del>3.0</del> <u>(2)</u>	<del>0.90</del> <u>0.69</u>	--
5.24	<b>(mg/kg-day)</b>					
5.25	<b>RSC</b>	--	0.5	<del>0.2</del> <u>(2)</u>	0.2	--
5.26	<b>SF (per</b>	--	--	--	--	--
5.27	<b>mg/kg-day)</b>					
5.28	<b>ADAF or</b>	--	--	--	--	--
5.29	<b>AF<sub>lifetime</sub></b>					

6.1	<b>Intake Rate</b>	--	<del>0.289</del> <u>0.290</u>	<del>0.077</del> <u>(2)</u>	<del>0.043</del> <u>0.045</u>	--
6.2	<b>(L/kg-day)</b>					
6.3	<b>Endpoints</b>	--	renal (kidney)	renal (kidney)	hematological	--
6.4			system	system;	(blood) system,	
6.5				<del>hematological</del>	<u>hepatic (liver)</u>	
6.6				<del>(blood) system</del>	system, renal	
6.7					(kidney) system	

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

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

Year Adopted: 2013

Volatility: Moderate

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	100	30	20	NA
<b>RfD (mg/kg-day)</b>	--	0.070	0.011	0.0037	--
<b>RSC</b>	--	0.5	0.2	0.2	--
<b>SF (per mg/kg-day)</b>	--	--	--	--	--
<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	--
<b>Intake Rate (L/kg-day)</b>	--	0.289	0.077	0.043	--
<b>Endpoints</b>	--	hepatic (liver) system	hepatic (liver) system	hepatic (liver) system	--

Subp. 3e. **Acrylamide.**

CAS number: 79-06-1

Year Adopted: 2015

Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	7	7 (2)	7 (2)	0.2

7.1	<b>RfD</b>	--	0.010	(2)	(2)	--
7.2	<b>(mg/kg-day)</b>					
7.3	<b>RSC</b>	--	0.2	(2)	(2)	--
7.4	<b>SF (per</b>	--	--	--	--	0.5
7.5	<b>mg/kg-day)</b>					
7.6	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
7.7	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
7.8						1 (ADAF <sub>16+</sub> )
7.9	<b>Intake Rate</b>	--	0.289	(2)	(2)	0.137 <sub>(&lt;2)</sub>
7.10	<b>(L/kg-day)</b>					0.047 <sub>(2 to &lt;16)</sub>
7.11						0.039 <sub>(16+)</sub>
7.12	<b>Endpoints</b>	--	developmental,	developmental,	developmental,	cancer
7.13			male	male	male	
7.14			reproductive	reproductive	reproductive	
7.15			system,	system,	system,	
7.16			nervous system	nervous system	nervous system	

Subp. 4. **Alachlor.**

CAS number: 15972-60-8

Year Adopted: 2018

Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	100	60	9	NA
<b>RfD</b>	--	0.077	0.020	0.0020	--
<b>(mg/kg-day)</b>					
<b>RSC</b>	--	0.5	0.2	0.2	--
<b>SF (per</b>	--	--	--	--	--
<b>mg/kg-day)</b>					
<b>ADAF or</b>	--	--	--	--	--
<b>AF<sub>lifetime</sub></b>					

8.1	<b>Intake Rate</b>	--	0.285	0.070	0.044	--
8.2	<b>(L/kg-day)</b>					
8.3	<b>Endpoints</b>	--	developmental, renal (kidney) system	hematological (blood) system, hepatic (liver) system, renal (kidney) system	hematological (blood) system, hepatic (liver) system, renal (kidney) system	--
8.4						
8.5						
8.6						
8.7						

Subp. 5. **Atrazine.**

CAS number: 1912-24-9

Year Adopted: 2009

Volatility: Nonvolatile

MCL-based HRL: 3 µg/L

Subp. 5a. **Bentazon.**

CAS number: 25057-89-0

Year Adopted: 2015

Volatility: Nonvolatile

8.17		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
8.18	<b>HRL (µg/L)</b>	400	60	50	30	NA
8.19	<b>RfD</b>	0.22	0.033	0.020	0.0060	--
8.20	<b>(mg/kg-day)</b>					
8.21	<b>RSC</b>	0.5	0.5	0.2	0.2	--
8.22	<b>SF (per</b>	--	--	--	--	--
8.23	<b>mg/kg-day)</b>					
8.24	<b>ADAF or</b>	--	--	--	--	--
8.25	<b>AF<sub>lifetime</sub></b>					
8.26	<b>Intake Rate</b>	0.289	0.289	0.077	0.043	--
8.27	<b>(L/kg-day)</b>					
8.28	<b>Endpoints</b>	developmental, female reproductive system	developmental	hematological (blood) system	thyroid	--
8.29						
8.30						
8.31						



9.1 Subp. 6. **Benzene.**

9.2 CAS number: 71-43-2

9.3 Year Adopted: 2009

9.4 Volatility: High

9.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
9.6	<b>HRL (µg/L)</b>	10	10	3	3 (3)	2
9.7	<b>RfD</b>	0.015	0.014	0.0013	(3)	--
9.8	<b>(mg/kg-day)</b>					
9.9	<b>RSC</b>	0.2	0.2	0.2	(3)	--
9.10	<b>SF (per</b>	--	--	--	--	0.055
9.11	<b>mg/kg-day)</b>					
9.12	<b>ADAF</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
9.13						3 (ADAF <sub>2 to &lt;16</sub> )
9.14						1 (ADAF <sub>16+</sub> )
9.15	<b>Intake Rate</b>	0.289	0.289	0.077	(3)	0.137 (<2)
9.16	<b>(L/kg-day)</b>					0.047 (2 to <16)
9.17						0.039 (16+)
9.18	<b>Endpoints</b>	develop-	hemato-	hemato-	hemato-	cancer
9.19		mental	logical	logical	logical	
9.20			(blood)	(blood)	(blood)	
9.21			system,	system,	system,	
9.22			immune	immune	immune	
9.23			system	system	system	

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

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

9.26 Subp. 6c. **Benzo[a]pyrene.**9.27 CAS number: 50-32-89.28 Year Adopted: 20219.29 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
<u>HRL (µg/L)</u>	<u>ND</u>	<u>0.5</u>	<u>0.5 (2)</u>	<u>0.5 (2)</u>	<u>0.1</u>
<u>RfD (mg/kg-day)</u>	<u>--</u>	<u>0.00031</u>	<u>(2)</u>	<u>(2)</u>	<u>--</u>
<u>RSC</u>	<u>--</u>	<u>0.5</u>	<u>(2)</u>	<u>(2)</u>	<u>--</u>
<u>SF (per mg/kg-day)</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>1</u>
<u>ADAF or AF<sub>lifetime</sub></u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u> <u>3 (ADAF<sub>2 to &lt;16</sub>)</u> <u>1 (ADAF<sub>16+</sub>)</u>
<u>Intake Rate (L/kg-day)</u>	<u>--</u>	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	<u>0.155 (&lt;2)</u> <u>0.040 (2 to &lt;16)</u> <u>0.042 (16+)</u>
<u>Endpoints</u>	<u>--</u>	<u>developmental, nervous system</u>	<u>developmental, nervous system</u>	<u>developmental, nervous system</u>	<u>cancer</u>

Subp. 6d. Benzophenone.

CAS number: 119-61-9

Year Adopted: 2021

Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
<u>HRL (µg/L)</u>	<u>ND</u>	<u>900</u>	<u>100</u>	<u>100 (3)</u>	<u>NA</u>
<u>RfD (mg/kg-day)</u>	<u>--</u>	<u>0.52</u>	<u>0.053</u>	<u>(3)</u>	<u>--</u>
<u>RSC</u>	<u>--</u>	<u>0.5</u>	<u>0.2</u>	<u>(3)</u>	<u>--</u>
<u>SF (per mg/kg-day)</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
<u>ADAF or AF<sub>lifetime</sub></u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>

11.1	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>0.074</u>	<u>0(3)</u>	--
11.2	<b><u>(L/kg-day)</u></b>					
11.3	<b><u>Endpoints</u></b>	--	<u>developmental</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	--
11.4				<u>system, renal</u>	<u>system, renal</u>	
11.5				<u>(kidney) system</u>	<u>(kidney) system</u>	

11.6 Subp. 6e. **1H-Benzotriazole.**

11.7 CAS number: 95-14-7

11.8 Year Adopted: 2021

11.9 Volatility: Low

11.10		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
11.11	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>20</u>	<u>20 (2)</u>	<u>20 (2)</u>	<u>NA</u>
11.12	<b><u>RfD</u></b>	--	<u>0.023</u>	<u>(2)</u>	<u>(2)</u>	--
11.13	<b><u>(mg/kg-day)</u></b>					
11.14	<b><u>RSC</u></b>	--	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	--
11.15	<b><u>SF (per</u></b>	--	--	--	--	--
11.16	<b><u>mg/kg-day)</u></b>					
11.17	<b><u>ADAF or</u></b>	--	--	--	--	--
11.18	<b><u>AF<sub>lifetime</sub></u></b>					
11.19	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	--
11.20	<b><u>(L/kg-day)</u></b>					
11.21	<b><u>Endpoints</u></b>	--	<u>developmental</u>	<u>developmental</u>	<u>developmental</u>	--

11.22 Subp. 6f. **1,1'-Biphenyl.**

11.23 CAS number: 92-52-4

11.24 Year Adopted: 2021

11.25 Volatility: Moderate

11.26		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
11.27	<b><u>HRL (µg/L)</u></b>	<u>400</u>	<u>100</u>	<u>100 (2)</u>	<u>100 (2)</u>	<u>10</u>
11.28	<b><u>RfD</u></b>	<u>0.58</u>	<u>0.18</u>	<u>(2)</u>	<u>(2)</u>	--
11.29	<b><u>(mg/kg-day)</u></b>					

12.1	<b><u>RSC</u></b>	<u>0.2</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	--
12.2	<b><u>SF (per</u></b>	--	--	--	--	<u>0.008</u>
12.3	<b><u>mg/kg-day)</u></b>					
12.4	<b><u>ADAF or</u></b>	--	--	--	--	<u>10 (ADAF<sub>&lt;2</sub>)</u>
12.5	<b><u>AF<sub>lifetime</sub></u></b>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
12.6						<u>1 (ADAF<sub>16+</sub>)</u>
12.7						
12.8	<b><u>Intake Rate</u></b>	<u>0.290</u>	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	<u>0.155</u> ( <sub>&lt;2</sub> )
12.9	<b><u>(L/kg-day)</u></b>					<u>0.040</u> ( <sub>2 to &lt;16</sub> )
12.10						<u>0.042</u> ( <sub>16+</sub> )
12.11						
12.12	<b><u>Endpoints</u></b>	<u>renal</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>cancer</u>
12.13		<u>(kidney)</u>	<u>system</u>	<u>system</u>	<u>system</u>	
12.14		<u>system</u>				

12.15 Subp. 6e 6g. **Bisphenol A (BPA).**

12.16 CAS number: 80-05-7

12.17 Year Adopted: 2015

12.18 Volatility: Nonvolatile

12.19		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
12.20	<b>HRL (µg/L)</b>	ND	100	20	20 (3)	NA
12.21	<b>RfD</b>	--	0.16	0.0065	(3)	--
12.22	<b>(mg/kg-day)</b>					
12.23	<b>RSC</b>	--	0.2	0.2	(3)	--
12.24	<b>SF (per</b>	--	--	--	--	--
12.25	<b>mg/kg-day)</b>					
12.26	<b>ADAF or</b>	--	--	--	--	--
12.27	<b>AF<sub>lifetime</sub></b>					

13.1	<b>Intake Rate</b>	--	0.289	0.077	(3)	--
13.2	<b>(L/kg-day)</b>					
13.3	<b>Endpoints</b>	--	developmental,	hepatic (liver)	hepatic (liver)	--
13.4			female	system, renal	system, renal	
13.5			reproductive	(kidney) system	(kidney) system	
13.6			system (E),			
13.7			hepatic (liver)			
13.8			system, male			
13.9			reproductive			
13.10			system (E),			
13.11			renal (kidney)			
13.12			system, thyroid			
13.13			(E)			

13.14 Subp. 6h. Bromodichloromethane.

13.15 CAS number: 75-27-4

13.16 Year Adopted: 2021

13.17 Volatility: High

13.18		<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
13.19	<u>HRL (µg/L)</u>	<u>400</u>	<u>30</u>	<u>30 (2)</u>	<u>30</u>	<u>3</u>
13.20	<u>RfD</u>	<u>0.073</u>	<u>0.039</u>	<u>(2)</u>	<u>0.0075</u>	<u>--</u>
13.21	<u>(mg/kg-day)</u>					
13.22	<u>RSC</u>	<u>0.2</u>	<u>0.2</u>	<u>(2)</u>	<u>0.2</u>	<u>--</u>
13.23	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>0.035</u>
13.24	<u>mg/kg-day)</u>					
13.25	<u>ADAF or</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
13.26	<u>AF<sub>lifetime</sub></u>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
13.27						<u>1 (ADAF<sub>16+</sub>)</u>
13.28						
13.29	<u>Intake Rate</u>	<u>0.038</u>	<u>0.290</u>	<u>(2)</u>	<u>0.045</u>	<u>0.155 (&lt;2)</u>
13.30	<u>(L/kg-day)</u>					
13.31						<u>0.040 (2 to &lt;16)</u>

14.1					<u>0.042</u> <sub>(16+)</sub>
14.2	<b>Endpoints</b>	<u>female</u>	<u>immune</u>	<u>immune</u>	<u>hepatic (liver)</u>
14.3		<u>reproductive</u>	<u>system,</u>	<u>system,</u>	<u>system</u>
14.4		<u>system (E)</u>	<u>spleen</u>	<u>spleen</u>	<u>cancer</u>

14.5 Subp. ~~6d~~ 6i. **Butyl benzyl phthalate.**

14.6 CAS number: 85-68-7

14.7 Year Adopted: 2015

14.8 Volatility: Low

14.9		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
14.10	<b>HRL (µg/L)</b>	100	100	100 (2)	100 (2)	NA
14.11	<b>RfD</b>	0.15	0.15	(2)	(2)	--
14.12	<b>(mg/kg-day)</b>					
14.13	<b>RSC</b>	0.2	0.2	(2)	(2)	--
14.14	<b>SF (per</b>	--	--	--	--	--
14.15	<b>mg/kg-day)</b>					
14.16	<b>ADAF or</b>	--	--	--	--	--
14.17	<b>AF<sub>lifetime</sub></b>					
14.18	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	--
14.19	<b>(L/kg-day)</b>					
14.20	<b>Endpoints</b>	developmental	developmental	developmental	developmental	--
14.21		(E)	(E)	(E)	(E)	

14.22 Subp. ~~6e~~ 6j. **Cadmium.**

14.23 CAS number: 7440-43-9

14.24 Year Adopted: 2015

14.25 Volatility: Nonvolatile

14.26		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
14.27	<b>HRL (µg/L)</b>	5	1	1	0.5	NA
14.28	<b>RfD</b>	0.0077	0.0016	0.00044	0.00011	--
14.29	<b>(mg/kg-day)</b>					

15.1	<b>RSC</b>	0.2	0.2	0.2	0.2	--
15.2	<b>SF (per</b>	--	--	--	--	--
15.3	<b>mg/kg-day)</b>					
15.4	<b>ADAF or</b>	--	--	--	--	--
15.5	<b>AF<sub>lifetime</sub></b>					
15.6	<b>Intake Rate</b>	0.289	0.289	0.077	0.043	--
15.7	<b>(L/kg-day)</b>					
15.8	<b>Endpoints</b>	developmental	developmental, nervous system, renal (kidney) system	developmental, skeletal	renal (kidney) system, skeletal	--
15.9						
15.10						
15.11						

15.12 Subp. ~~6f~~6k. **Carbamazepine.**

15.13 CAS number: 298-46-4

15.14 Year Adopted: 2013

15.15 Volatility: Nonvolatile

15.16		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
15.17	<b>HRL (µg/L)</b>	40	40	40 (2)	40 (2)	NA
15.18	<b>RfD</b>	0.013	0.013	(2)	(2)	--
15.19	<b>(mg/kg-day)</b>					
15.20	<b>RSC</b>	0.8	0.8	(2)	(2)	--
15.21	<b>SF (per</b>	--	--	--	--	--
15.22	<b>mg/kg-day)</b>					
15.23	<b>ADAF or</b>	--	--	--	--	--
15.24	<b>AF<sub>lifetime</sub></b>					
15.25	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	--
15.26	<b>(L/kg-day)</b>					
15.27	<b>Endpoints</b>	develop- mental, nervous system	develop- mental, hematological (blood) system, hepatic (liver) system,	develop- mental, hematological (blood) system, hepatic (liver) system,	develop- mental, hematological (blood) system, hepatic (liver) system,	--
15.28						
15.29						
15.30						
15.31						
15.32						
15.33						

16.1		immune	immune	immune	
16.2		system,	system,	system,	
16.3		nervous	nervous	nervous	
16.4		system, male	system, male	system, male	
16.5		reproductive	reproductive	reproductive	
16.6		system (E),	system (E),	system (E),	
16.7		female	female	female	
16.8		reproductive	reproductive	reproductive	
16.9		system (E),	system (E),	system (E),	
16.10		thyroid (E)	thyroid (E)	thyroid (E)	

16.11 Subp. ~~6g~~ 6l. **Carbon tetrachloride.**

16.12 CAS number: 56-23-5

16.13 Year Adopted: 2013

16.14 Volatility: High

16.15		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
16.16	<b>HRL (µg/L)</b>	100	3	3 (2)	3 (2)	1
16.17	<b>RfD</b>	0.18	0.0037	(2)	(2)	--
16.18	<b>(mg/kg-day)</b>					
16.19	<b>RSC</b>	0.2	0.2	(2)	(2)	--
16.20	<b>SF (per</b>	--	--	--	--	0.07
16.21	<b>mg/kg-day)</b>					
16.22	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
16.23	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
16.24						1 (ADAF <sub>16+</sub> )
16.25						
16.26	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	0.137 ( <sub>&lt;2</sub> )
16.27	<b>(L/kg-day)</b>					0.047 ( <sub>2 to &lt;16</sub> )
16.28						0.039 ( <sub>16+</sub> )
16.29						
16.30	<b>Endpoints</b>	develop-	hepatic (liver)	hepatic (liver)	hepatic (liver)	cancer
16.31		mental,	system	system	system	
16.32		hepatic				



17.1		(liver)			
17.2		system			

17.3 Subp. 7. **Chloroform.**

17.4 CAS number: 67-66-3

17.5 Year Adopted: 2018

17.6 Volatility: High

17.7		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
17.8	<b>HRL (µg/L)</b>	ND	20	20 (2)	20 (2)	NA
17.9	<b>RfD</b>	--	0.022	(2)	(2)	--
17.10	<b>(mg/kg-day)</b>					
17.11	<b>RSC</b>	--	0.2	(2)	(2)	--
17.12	<b>SF (per</b>	--	--	--	--	--
17.13	<b>mg/kg-day)</b>					
17.14	<b>ADAF or</b>	--	--	--	--	--
17.15	<b>AF<sub>lifetime</sub></b>					
17.16	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
17.17	<b>(L/kg-day)</b>					
17.18	<b>Endpoints</b>	--	developmental,	developmental,	developmental,	--
17.19			hepatic (liver)	hepatic (liver)	hepatic (liver)	
17.20			system, immune	system, immune	system, immune	
17.21			system	system	system	

17.22 Subp. 7a. **Clothianidin.**

17.23 CAS number: 210880-92-5, 205510-53-8

17.24 Year Adopted: 2018

17.25 Volatility: Nonvolatile

17.26		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
17.27	<b>HRL (µg/L)</b>	ND	200	200 (2)	200 (2)	NA
17.28	<b>RfD</b>	--	0.093	(2)	(2)	--
17.29	<b>(mg/kg-day)</b>					

18.1	<b>RSC</b>	--	0.5	(2)	(2)	--
18.2	<b>SF (per</b>	--	--	--	--	--
18.3	<b>mg/kg-day)</b>					
18.4	<b>ADAF or</b>	--	--	--	--	--
18.5	<b>AF<sub>lifetime</sub></b>					
18.6	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
18.7	<b>(L/kg-day)</b>					
18.8	<b>Endpoints</b>	--	developmental	developmental	developmental	--

Subp. 8. **Cyanazine.**

CAS number: 21725-46-2

Year Adopted: 2018

Volatility: Nonvolatile

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	3	3	3	3	1	NA
<b>RfD</b>	0.0015	0.0015	0.0012	0.00022	--	
<b>(mg/kg-day)</b>						
<b>RSC</b>	0.5	0.5	0.2	0.2	--	
<b>SF (per</b>	--	--	--	--	--	--
<b>mg/kg-day)</b>						
<b>ADAF or</b>	--	--	--	--	--	--
<b>AF<sub>lifetime</sub></b>						
<b>Intake Rate</b>	0.285	0.285	0.070	0.044	--	
<b>(L/kg-day)</b>						
<b>Endpoints</b>	developmental, female reproductive system	developmental, female reproductive system	developmental, female reproductive system, hepatic (liver) system, renal (kidney) system	None	--	

Subp. 8a. [Renumbered subp 8f]

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

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

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

19.4 Subp. 8e. **Dibutyl phthalate.**

19.5 CAS number: 84-74-2

19.6 Year Adopted: 2015

19.7 Volatility: Low

19.8		Acute	Short-term	Subchronic	Chronic	Cancer
19.9	HRL (µg/L)	20	20	20 (2)	20 (2)	NA
19.10	RfD	0.023	0.023	(2)	(2)	--
19.11	(mg/kg-day)					
19.12	RSC	0.2	0.2	(2)	(2)	--
19.13	SF (per	--	--	--	--	--
19.14	mg/kg-day)					
19.15	ADAF or	--	--	--	--	--
19.16	AF <sub>lifetime</sub>					
19.17	Intake Rate	0.289	0.289	(2)	(2)	--
19.18	(L/kg-day)					
19.19	Endpoints	developmental	developmental	developmental	developmental	--
19.20		(E)	(E)	(E)	(E)	

19.21 Subp. 8f. **1, 4-Dichlorobenzene.**

19.22 CAS number: 106-46-7

19.23 Year Adopted: 2021

19.24 Volatility: High

19.25		<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
19.26	<u>HRL (µg/L)</u>	<u>ND</u>	<u>50</u>	<u>50 (2)</u>	<u>50 (2)</u>	<u>NA</u>
19.27	<u>RfD</u>	<u>--</u>	<u>0.069</u>	<u>(2)</u>	<u>(2)</u>	<u>--</u>
19.28	<u>(mg/kg-day)</u>					

20.1	<b><u>RSC</u></b>	--	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	--
20.2	<b><u>SF (per</u></b>	--	--	--	--	--
20.3	<b><u>mg/kg-day)</u></b>	--	--	--	--	--
20.4	<b><u>ADAF or</u></b>	--	--	--	--	--
20.5	<b><u>AF</u></b> <sub>lifetime</sub>	--	--	--	--	--
20.6	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	--
20.7	<b><u>(L/kg-day)</u></b>	--	--	--	--	--
20.8	<b><u>Endpoints</u></b>	--	<u>developmental,</u>	<u>developmental,</u>	<u>developmental,</u>	--
20.9			<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	
20.10			<u>system, nervous</u>	<u>system, nervous</u>	<u>system, nervous</u>	
20.11			<u>system</u>	<u>system</u>	<u>system</u>	

20.12 Subp. 8f 8g. **Dichlorodifluoromethane.**

20.13 CAS number: 75-71-8

20.14 Year Adopted: 2011

20.15 Volatility: High

20.16		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
20.17	<b>HRL (µg/L)</b>	ND	ND	ND	700	NA
20.18	<b>RfD</b>	--	--	--	0.15	--
20.19	<b>(mg/kg-day)</b>	--	--	--	--	--
20.20	<b>RSC</b>	--	--	--	0.2	--
20.21	<b>SF (per</b>	--	--	--	--	--
20.22	<b>mg/kg-day)</b>	--	--	--	--	--
20.23	<b>ADAF or</b>	--	--	--	--	--
20.24	<b>AF</b> <sub>lifetime</sub>	--	--	--	--	--
20.25	<b>Intake Rate</b>	--	--	--	0.043	--
20.26	<b>(L/kg-day)</b>	--	--	--	--	--
20.27	<b>Endpoints</b>	--	--	--	None	--

21.1 Subp. ~~8g~~ 8h. **1,2-Dichloroethane.**

21.2 CAS number: 107-06-2

21.3 Year Adopted: 2013

21.4 Volatility: High

21.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
21.6	<b>HRL (µg/L)</b>	ND	200	200 (2)	60	1
21.7	<b>RfD</b>	--	0.23	(2)	0.012	--
21.8	<b>(mg/kg-day)</b>					
21.9	<b>RSC</b>	--	0.2	(2)	0.2	--
21.10	<b>SF (per</b>	--	--	--	--	0.091
21.11	<b>mg/kg-day)</b>					
21.12	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
21.13	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
21.14						1 (ADAF <sub>16+</sub> )
21.15						
21.16	<b>Intake Rate</b>	--	0.289	(2)	0.043	0.137 ( <sub>&lt;2</sub> )
21.17	<b>(L/kg-day)</b>					
21.18						0.047 ( <sub>2 to &lt;16</sub> )
21.19						0.039 ( <sub>16+</sub> )
21.20	<b>Endpoints</b>	--	hepatic (liver)	hepatic (liver)	renal (kidney)	cancer
21.21			system	system	system,	
21.22					hepatic (liver)	
21.23					system	

21.24 Subp. ~~8h~~ 8i. **trans-1,2-Dichloroethene.**

21.25 CAS number: 156-60-5

21.26 Year Adopted: ~~2013~~ 2021

21.27 Volatility: High

21.28		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
21.29	<b>HRL (µg/L)</b>	ND	ND	<del>200</del> <u>50</u>	<del>40</del> <u>9</u>	NA

22.1	<b>RfD</b>	--	--	<del>0.091</del> <u>0.020</u>	<del>0.0091</del> <u>0.0020</u>	--
22.2	<b>(mg/kg-day)</b>					
22.3	<b>RSC</b>	--	--	0.2	0.2	--
22.4	<b>SF (per</b>	--	--	--	--	--
22.5	<b>mg/kg-day)</b>					
22.6	<b>ADAF or</b>	--	--	--	--	--
22.7	<b>AF<sub>lifetime</sub></b>					
22.8	<b>Intake Rate</b>	--	--	<del>0.077</del> <u>0.074</u>	<del>0.043</del> <u>0.045</u>	--
22.9	<b>(L/kg-day)</b>					
22.10	<b>Endpoints</b>	--	--	immune system	immune system	--

22.11 Subp. 8i 8j. **1,1-Dichloroethylene. (Vinylidene chloride)**

22.12 CAS number: 75-35-4

22.13 Year Adopted: ~~2011~~ 2021

22.14 Volatility: High

22.15		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
22.16	<b>HRL (µg/L)</b>	ND	ND	200	200	NA
22.17	<b>RfD</b>	--	--	<del>0.090</del> <u>0.069</u>	<del>0.046</del> <u>0.040</u>	--
22.18	<b>(mg/kg-day)</b>					
22.19	<b>RSC</b>	--	--	0.2	0.2	--
22.20	<b>SF (per</b>	--	--	--	--	--
22.21	<b>mg/kg-day)</b>					
22.22	<b>ADAF or</b>	--	--	--	--	--
22.23	<b>AF<sub>lifetime</sub></b>					
22.24	<b>Intake Rate</b>	--	--	<del>0.077</del> <u>0.074</u>	<del>0.043</del> <u>0.045</u>	--
22.25	<b>(L/kg-day)</b>					
22.26	<b>Endpoints</b>	--	--	hepatic (liver)	hepatic (liver)	--
22.27				system	system	

23.1 Subp. 9. **cis 1,2-Dichloroethylene.**

23.2 CAS number: 156-59-2

23.3 Year Adopted: 2018

23.4 Volatility: High

23.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
23.6	<b>HRL (µg/L)</b>	ND	20	10	6	NA
23.7	<b>RfD</b>	--	0.033	0.0043	0.0013	--
23.8	<b>(mg/kg-day)</b>					
23.9	<b>RSC</b>	--	0.2	0.2	0.2	--
23.10	<b>SF (per</b>	--	--	--	--	--
23.11	<b>mg/kg-day)</b>					
23.12	<b>ADAF or</b>	--	--	--	--	--
23.13	<b>AF<sub>lifetime</sub></b>					
23.14	<b>Intake Rate</b>	--	0.285	0.070	0.044	--
23.15	<b>(L/kg-day)</b>					
23.16	<b>Endpoints</b>	--	hepatic (liver)	renal (kidney)	renal (kidney)	--
23.17			system	system	system	

23.18 Subp. 10. **Dichloromethane.**

23.19 CAS number: 75-09-2

23.20 Year Adopted: 2009

23.21 Volatility: High

23.22 MCL-based HRL: 5 µg/L

23.23 Subp. 10a. **2,4-Dichlorophenoxyacetic acid (2,4-D).**

23.24 CAS number: 94-75-7

23.25 Year Adopted: 2018

23.26 Volatility: Nonvolatile

23.27		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
23.28	<b>HRL (µg/L)</b>	ND	30	30 (2)	30 (2)	NA

24.1	<b>RfD</b>	--	0.048	(2)	(2)	--
24.2	<b>(mg/kg-day)</b>					
24.3	<b>RSC</b>	--	0.2	(2)	(2)	--
24.4	<b>SF (per</b>	--	--	--	--	--
24.5	<b>mg/kg-day)</b>					
24.6	<b>ADAF or</b>	--	--	--	--	--
24.7	<b>AF<sub>lifetime</sub></b>					
24.8	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
24.9	<b>(L/kg-day)</b>					
24.10	<b>Endpoints</b>	--	adrenal,	adrenal,	adrenal,	--
24.11			developmental,	developmental,	developmental,	
24.12			thyroid (E)	thyroid (E)	thyroid (E)	

24.13 Subp. 11. **Dieldrin.**

24.14 CAS number: 60-57-1

24.15 Year Adopted: 2018

24.16 Volatility: Nonvolatile

24.17		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
24.18	<b>HRL (µg/L)</b>	ND	0.2	0.2 (2)	0.2	0.006
24.19	<b>RfD</b>	--	0.00011	(2)	0.000043	--
24.20	<b>(mg/kg-day)</b>					
24.21	<b>RSC</b>	--	0.5	(2)	0.2	--
24.22	<b>SF (per</b>	--	--	--	--	16
24.23	<b>mg/kg-day)</b>					
24.24	<b>AF<sub>lifetime</sub></b>	--	--	--	--	2.5
24.25	<b>Intake Rate</b>	--	0.285	(2)	0.044	0.044
24.26	<b>(L/kg-day)</b>					
24.27	<b>Endpoints</b>	--	developmental,	developmental,	developmental,	cancer
24.28			immune system,	immune system,	hepatic (liver)	
24.29			nervous system	nervous system	system, immune	
24.30					system, nervous	
24.31					system	

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



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

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

25.3 CAS number: 117-81-7

25.4 Year Adopted: 2015

25.5 Volatility: Nonvolatile

25.6		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
25.7	<b>HRL (µg/L)</b>	20	20	20 (2)	20 (2)	7
25.8	<b>RfD</b>	0.029	0.029	(2)	(2)	--
25.9	<b>(mg/kg-day)</b>					
25.10	<b>RSC</b>	0.2	0.2	(2)	(2)	--
25.11	<b>SF (per</b>	--	--	--	--	0.014
25.12	<b>mg/kg-day)</b>					
25.13	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
25.14	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
25.15						1 (ADAF <sub>16+</sub> )
25.16	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	0.137 <sub>(&lt;2)</sub>
25.17	<b>(L/kg-day)</b>					0.047 <sub>(2 to &lt;16)</sub>
25.18						0.039 <sub>(16+)</sub>
25.19	<b>Endpoints</b>	develop-	develop-	develop-	develop-	cancer
25.20		mental (E),	mental (E),	mental (E),	mental (E),	
25.21		male	male	male	male	
25.22		reproductive	reproductive	reproductive	reproductive	
25.23		system (E)	system (E)	system (E)	system (E)	

25.24 Subp. 11d. **N,N-Diethyl-meta-toluamide (DEET).**

25.25 CAS number: 134-62-3

25.26 Year Adopted: 2013

25.27 Volatility: Nonvolatile

25.28		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
25.29	<b>HRL (µg/L)</b>	ND	200	200 (2)	200 (2)	NA

26.1	<b>RfD</b>	--	0.23	(2)	(2)	--
26.2	<b>(mg/kg-day)</b>					
26.3	<b>RSC</b>	--	0.2	(2)	(2)	--
26.4	<b>SF (per</b>	--	--	--	--	--
26.5	<b>mg/kg-day)</b>					
26.6	<b>ADAF or</b>	--	--	--	--	--
26.7	<b>AF<sub>lifetime</sub></b>					
26.8	<b>Intake Rate</b>	--	0.289	(2)	(2)	--
26.9	<b>(L/kg-day)</b>					
26.10	<b>Endpoints</b>	--	developmental, nervous system	developmental, nervous system	developmental, nervous system	--
26.11						

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

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

26.14 Year Adopted: 2015

26.15 Volatility: Moderate

26.16		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
26.17	<b>HRL (µg/L)</b>	ND	600	600 (2)	300	NA
26.18	<b>RfD</b>	--	0.34	(2)	0.060	--
26.19	<b>(mg/kg-day)</b>					
26.20	<b>RSC</b>	--	0.5	(2)	0.2	--
26.21	<b>SF (per</b>	--	--	--	--	--
26.22	<b>mg/kg-day)</b>					
26.23	<b>ADAF or</b>	--	--	--	--	--
26.24	<b>AF<sub>lifetime</sub></b>					
26.25	<b>Intake Rate</b>	--	0.289	(2)	0.043	--
26.26	<b>(L/kg-day)</b>					
26.27	<b>Endpoints</b>	--	developmental, female reproductive system, hepatic (liver) system, nervous system	developmental, female reproductive system, hepatic (liver) system, nervous system	hepatic (liver) system	--
26.28						
26.29						
26.30						
26.31						
26.32						

27.1 Subp. 11f. **Dinoseb.**

27.2 CAS number: 88-85-7

27.3 Year Adopted: 2018

27.4 Volatility: Moderate

27.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
27.6	<b>HRL (µg/L)</b>	ND	8	8 (2)	8 (2)	NA
27.7	<b>RfD</b>	--	0.0048	(2)	(2)	--
27.8	<b>(mg/kg-day)</b>					
27.9	<b>RSC</b>	--	0.5	(2)	(2)	--
27.10	<b>SF (per</b>	--	--	--	--	--
27.11	<b>mg/kg-day)</b>					
27.12	<b>ADAF or</b>	--	--	--	--	--
27.13	<b>AF<sub>lifetime</sub></b>					
27.14	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
27.15	<b>(L/kg-day)</b>					
27.16	<b>Endpoints</b>	--	developmental	developmental	developmental	--

27.17 Subp. 11g. **1,4-Dioxane.**

27.18 CAS number: 123-91-1

27.19 Year Adopted: 2013

27.20 Volatility: Low

27.21		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
27.22	<b>HRL (µg/L)</b>	ND	ND	300	100	1
27.23	<b>RfD</b>	--	--	0.12	0.025	--
27.24	<b>(mg/kg-day)</b>					
27.25	<b>RSC</b>	--	--	0.2	0.2	--
27.26	<b>SF (per</b>	--	--	--	--	0.1
27.27	<b>mg/kg-day)</b>					
27.28	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>2</sub> )
27.29	<b>AF<sub>lifetime</sub></b>					

28.1					3 (ADAF <sub>2 to &lt;16</sub> )
28.2					1 (ADAF <sub>16+</sub> )
28.3	<b>Intake Rate</b>	--	--	0.077	0.043
28.4	<b>(L/kg-day)</b>				0.137 (<2)
28.5					0.047 (2 to <16)
28.6	<b>Endpoints</b>	--	--	hepatic (liver)	hepatic (liver)
28.7				system, renal	system, renal
28.8				(kidney)	(kidney)
28.9				system,	system,
28.10				respiratory	respiratory
28.11				system	system

Subp. 12. [Repealed, 40 SR 689]

Subp. 12a. **17 $\alpha$ -Ethinylestradiol.**

CAS number: 57-63-6

Year Adopted: 2021

Volatility: Nonvolatile

	<u><b>Acute</b></u>	<u><b>Short-term</b></u>	<u><b>Subchronic</b></u>	<u><b>Chronic</b></u>	<u><b>Cancer</b></u>
<u><b>HRL (<math>\mu</math>g/L)</b></u>	<u>ND</u>	<u>0.0005</u>	<u>0.0002</u>	<u>0.0002</u>	<u>NA</u>
<u><b>RfD</b></u>	--	<u><math>1.7 \times 10^{-7}</math></u>	<u><math>1.4 \times 10^{-8}</math></u>	<u><math>1.4 \times 10^{-8}</math></u>	--
<u><b>(mg/kg-day)</b></u>					
<u><b>RSC</b></u>	--	<u>0.8</u>	<u>0.8</u>	<u>0.8</u>	--
<u><b>SF (per</b></u>	--	--	--	--	--
<u><b>mg/kg-day)</b></u>					
<u><b>ADAF or</b></u>	--	--	--	--	--
<u><b>AF<sub>lifetime</sub></b></u>					
<u><b>Intake Rate</b></u>	--	<u>0.290</u>	<u>0.074</u>	<u>0.045</u>	--
<u><b>(L/kg-day)</b></u>					
<u><b>Endpoints</b></u>	--	<u>developmental</u>	<u>developmental</u>	<u>developmental</u>	--
		<u>(E), female</u>			
		<u>reproductive</u>			
		<u>system (E),</u>			
		<u>male</u>			

29.1		<u>reproductive</u>			
29.2		<u>system (E)</u>			

29.3 Subp. ~~12a~~ 12b. **Ethylbenzene.**

29.4 CAS number: 100-41-4

29.5 Year Adopted: ~~2011~~ 2021

29.6 Volatility: High

29.7		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
29.8	<b>HRL (µg/L)</b>	ND	<del>50</del> <u>40</u>	<del>50 (2)</del> <u>40 (2)</u>	<del>50 (2)</del> <u>40 (2)</u>	NA
29.9	<b>RfD</b>	--	<del>0.075</del> <u>0.06</u>	(2)	(2)	--
29.10	<b>(mg/kg-day)</b>					
29.11	<b>RSC</b>	--	0.2	(2)	(2)	--
29.12	<b>SF (per</b>	--	--	--	--	--
29.13	<b>mg/kg-day)</b>					
29.14	<b>ADAF or</b>	--	--	--	--	--
29.15	<b>AF<sub>lifetime</sub></b>					
29.16	<b>Intake Rate</b>	--	<del>0.289</del> <u>0.290</u>	(2)	(2)	--
29.17	<b>(L/kg-day)</b>					
29.18	<b>Endpoints</b>	--	hepatic (liver)	hepatic (liver)	hepatic (liver)	--
29.19			system, renal	system, renal	system, renal	
29.20			(kidney) system	(kidney) system	(kidney) system	

29.21 Subp. ~~12b~~ 12c. **S-Ethyl-N,N-dipropylthiocarbamate (EPTC).**

29.22 CAS number: 759-94-4

29.23 Year Adopted: 2018

29.24 Volatility: Moderate

29.25		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
29.26	<b>HRL (µg/L)</b>	300	300	90	40	NA
29.27	<b>RfD</b>	0.16	0.16	0.033	0.0083	--
29.28	<b>(mg/kg-day)</b>					
29.29	<b>RSC</b>	0.5	0.5	0.2	0.2	--

30.1	<b>SF (per</b>	--	--	--	--	--
30.2	<b>mg/kg-day)</b>					
30.3	<b>ADAF or</b>	--	--	--	--	--
30.4	<b>AF<sub>lifetime</sub></b>					
30.5	<b>Intake Rate</b>	0.285	0.285	0.070	0.044	--
30.6	<b>(L/kg-day)</b>					
30.7	<b>Endpoints</b>	nervous system	developmental,	cardiovascular	cardiovascular	--
30.8			female	system	system	
30.9			reproductive			
30.10			system, nervous			
30.11			system			

Subp. 12e 12d. **Ethylene glycol.**

CAS number: 107-21-1

Year Adopted: ~~2011~~ 2021

Volatility: Nonvolatile

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	<del>4,000</del> <u>ND</u>	<del>4,000</del> <u>2,000</u>	2,000	2,000	NA	
<b>RfD</b>	<del>0.76</del> <u>--</u>	<del>0.76</del> <u>0.33</u>	<del>0.72</del> <u>(2)</u>	<del>0.50</del> <u>(2)</u>	--	
<b>(mg/kg-day)</b>						
<b>RSC</b>	<del>0.2</del> <u>--</u>	0.2	0.2	0.2	--	
<b>SF (per</b>	--	--	--	--	--	--
<b>mg/kg-day)</b>						
<b>ADAF or</b>	--	--	--	--	--	--
<b>AF<sub>lifetime</sub></b>						
<b>Intake Rate</b>	<del>0.043</del> <u>--</u>	<del>0.043</del> <u>0.038</u>	<del>0.077</del> <u>(2)</u>	<del>0.043</del> <u>(2)</u>	--	
<b>(L/kg-day)</b>						
<b>Endpoints</b>	<del>developmental</del>	developmental	developmental,	developmental,	--	
	<u>--</u>		renal (kidney)	<u>male</u>		
			system	<u>reproductive</u>		
				<u>system, renal</u>		
				<u>(kidney) system</u>		

31.1 Subp. 12d 12e. Fluoranthene.

31.2 CAS number: 206-44-0

31.3 Year Adopted: 2018

31.4 Volatility: Low

31.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
31.6	<b>HRL (µg/L)</b>	ND	ND	200	70	NA
31.7	<b>RfD</b>	--	--	0.053	0.016	--
31.8	<b>(mg/kg-day)</b>					
31.9	<b>RSC</b>	--	--	0.2	0.2	--
31.10	<b>SF (per</b>	--	--	--	--	--
31.11	<b>mg/kg-day)</b>					
31.12	<b>ADAF or</b>	--	--	--	--	--
31.13	<b>AF<sub>lifetime</sub></b>					
31.14	<b>Intake Rate</b>	--	--	0.070	0.044	--
31.15	<b>(L/kg-day)</b>					
31.16	<b>Endpoints</b>	--	--	hepatic (liver) system, renal (kidney) system	hepatic (liver) system, renal (kidney) system	--
31.17						
31.18						

31.19 Subp. 12f. Fluorene (9H-Fluorene).

31.20 CAS number: 86-73-7

31.21 Year Adopted: 2021

31.22 Volatility: Moderate

31.23		<u><b>Acute</b></u>	<u><b>Short-term</b></u>	<u><b>Subchronic</b></u>	<u><b>Chronic</b></u>	<u><b>Cancer</b></u>
31.24	<u><b>HRL (µg/L)</b></u>	<u>ND</u>	<u>ND</u>	<u>200</u>	<u>80</u>	<u>NA</u>
31.25	<u><b>RfD</b></u>	<u>--</u>	<u>--</u>	<u>0.058</u>	<u>0.018</u>	<u>--</u>
31.26	<u><b>(mg/kg-day)</b></u>					
31.27	<u><b>RSC</b></u>	<u>--</u>	<u>--</u>	<u>0.2</u>	<u>0.2</u>	<u>--</u>
31.28	<u><b>SF (per</b></u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
31.29	<u><b>mg/kg-day)</b></u>					

32.1	<b><u>ADAF or</u></b>	--	--	--	--
32.2	<b><u>AF<sub>lifetime</sub></u></b>				
32.3	<b><u>Intake Rate</u></b>	--	--	<u>0.074</u>	<u>0.045</u>
32.4	<b><u>(L/kg-day)</u></b>				--
32.5	<b><u>Endpoints</u></b>	--	--	<u>hematological</u>	<u>hematological</u>
32.6				<u>(blood)</u>	<u>(blood)</u>
32.7				<u>system, spleen</u>	<u>system,</u>
32.8					<u>spleen</u>

32.9 Subp. 12g. **Fomesafen.**

32.10 CAS number: 72178-02-0

32.11 Year Adopted: 2021

32.12 Volatility: Nonvolatile

32.13		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
32.14	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>200</u>	<u>200 (2)</u>	<u>20</u>	<u>NA</u>
32.15	<b><u>RfD</u></b>	--	<u>0.12</u>	<u>(2)</u>	<u>0.005</u>	--
32.16	<b><u>(mg/kg-day)</u></b>					
32.17	<b><u>RSC</u></b>	--	<u>0.5</u>	<u>(2)</u>	<u>0.2</u>	--
32.18	<b><u>SF (per</u></b>	--	--	--	--	--
32.19	<b><u>mg/kg-day)</u></b>					
32.20	<b><u>ADAF or</u></b>	--	--	--	--	--
32.21	<b><u>AF<sub>lifetime</sub></u></b>					
32.22	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>0.045</u>	--
32.23	<b><u>(L/kg-day)</u></b>					
32.24	<b><u>Endpoints</u></b>	--	<u>developmental,</u>	<u>developmental,</u>	<u>hepatic</u>	--
32.25			<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>(liver) system</u>	
32.26			<u>system, immune</u>	<u>system,</u>		
32.27			<u>system</u>	<u>immune</u>		
32.28				<u>system</u>		



33.1 Subp. 12h. Imidacloprid.33.2 CAS number: 138261-41-333.3 Year Adopted: 202133.4 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
33.5					
33.6	<u>HRL (µg/L)</u>	<u>100</u>	<u>2</u>	<u>2 (2)</u>	<u>NA</u>
33.7	<u>RfD</u>	<u>0.15</u>	<u>0.0036</u>	<u>(2)</u>	<u>(2)</u>
33.8	<u>(mg/kg-day)</u>				<u>--</u>
33.9	<u>RSC</u>	<u>0.2</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>
33.10	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
33.11	<u>mg/kg-day)</u>				
33.12	<u>ADAF or</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
33.13	<u>AF<sub>lifetime</sub></u>				
33.14	<u>Intake Rate</u>	<u>0.290</u>	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>
33.15	<u>(L/kg-day)</u>				<u>--</u>
33.16	<u>Endpoints</u>	<u>nervous system</u>	<u>immune system</u>	<u>immune</u>	<u>immune</u>
33.17			<u>system</u>	<u>system</u>	<u>--</u>

33.18 Subp. 12i. Manganese.33.19 CAS number: 7439-96-533.20 Year Adopted: 202133.21 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
33.22					
33.23	<u>HRL (µg/L)</u>	<u>ND</u>	<u>100</u>	<u>ND</u>	<u>ND</u>
33.24	<u>RfD</u>	<u>--</u>	<u>0.083</u>	<u>--</u>	<u>--</u>
33.25	<u>(mg/kg-day)</u>				
33.26	<u>RSC</u>	<u>--</u>	<u>0.5</u>	<u>--</u>	<u>--</u>
33.27	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
33.28	<u>mg/kg-day)</u>				

34.1	<b><u>ADAF or</u></b>	--	--	--	--
34.2	<b><u>AF<sub>lifetime</sub></u></b>				
34.3	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	--	--
34.4	<b><u>(L/kg-day)</u></b>				
34.5	<b><u>Endpoints</u></b>	--	<u>developmental,</u>	--	--
34.6			<u>nervous system</u>		

Subp. ~~12e~~ 12j. **Metolachlor and S-Metolachlor.**

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

Year Adopted: ~~2011~~ 2021

Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	<del>400</del> <u>ND</u>	<del>400</del> <u>300</u>	300 <u>(2)</u>	300 <del>(3)</del> <u>(2)</u>	NA
RfD (mg/kg-day)	<del>0.24</del> <u>--</u>	<del>0.24</del> <u>0.19</u>	<del>0.097</del> <u>(2)</u>	<del>(3)</del> <u>(2)</u>	--
RSC	<del>0.5</del> <u>--</u>	0.5	<del>0.2</del> <u>(2)</u>	<del>(3)</del> <u>(2)</u>	--
SF (per mg/kg-day)	--	--	--	--	--
ADAF or AF <sub>lifetime</sub>	--	--	--	--	--
Intake Rate (L/kg-day)	<del>0.289</del> <u>--</u>	<del>0.289</del> <u>0.290</u>	<del>0.077</del> <u>(2)</u>	<del>(3)</del> <u>(2)</u>	--
Endpoints	<del>developmental</del> <u>--</u>	developmental	<del>none</del> <u>developmental</u>	<del>none</del> <u>developmental</u>	--

Subp. ~~12f~~ 12k. **Metolachlor ESA.**

CAS number: 171118-09-5

Year Adopted: ~~2011~~ 2021

Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
HRL (µg/L)	ND	ND	<del>4,000</del> <u>7,000</u>	<del>800</del> <u>1,000</u>	NA

35.1	<b>RfD</b>	--	--	<del>1.7</del> <u>2.7</u>	<del>0.17</del> <u>0.27</u>	--
35.2	<b>(mg/kg-day)</b>					
35.3	<b>RSC</b>	--	--	0.2	0.2	--
35.4	<b>SF (per</b>	--	--	--	--	--
35.5	<b>mg/kg-day)</b>					
35.6	<b>ADAF or</b>	--	--	--	--	--
35.7	<b>AF<sub>lifetime</sub></b>					
35.8	<b>Intake Rate</b>	--	--	<del>0.077</del> <u>0.074</u>	<del>0.043</del> <u>0.045</u>	--
35.9	<b>(L/kg-day)</b>					
35.10	<b>Endpoints</b>	--	--	hepatic (liver)	hepatic (liver)	--
35.11				system	system	

Subp. ~~12g~~ 12l. **Metolachlor OXA.**

CAS number: 152019-73-3

Year Adopted: ~~2011~~ 2021

Volatility: Nonvolatile

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
35.16	<b>HRL (µg/L)</b>	ND	<del>3,000</del> <u>5,000</u>	<del>3,000</del> <u>5,000</u> (2)	<del>800</del> <u>1,000</u>	NA
35.17						
35.18						
35.19	<b>RfD</b>	--	<del>1.7</del> <u>2.7</u>	(2)	<del>0.17</del> <u>0.27</u>	--
35.20	<b>(mg/kg-day)</b>					
35.21	<b>RSC</b>	--	0.5	(2)	0.2	--
35.22	<b>SF (per</b>	--	--	--	--	--
35.23	<b>mg/kg-day)</b>					
35.24	<b>ADAF or</b>	--	--	--	--	--
35.25	<b>AF<sub>lifetime</sub></b>					
35.26	<b>Intake Rate</b>	--	<del>0.289</del> <u>0.290</u>	(2)	<del>0.043</del> <u>0.045</u>	--
35.27	<b>(L/kg-day)</b>					
35.28	<b>Endpoints</b>	--	none	none	none	--

36.1 Subp. ~~12h~~ 12m. **Metribuzin.**

36.2 CAS number: 21087-64-9

36.3 Year Adopted: 2013

36.4 Volatility: Low

36.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
36.6	<b>HRL (µg/L)</b>	30	10	10 (2)	10 (2)	NA
36.7	<b>RfD</b>	0.016	0.006	(2)	(2)	--
36.8	<b>(mg/kg-day)</b>					
36.9	<b>RSC</b>	0.5	0.5	(2)	(2)	--
36.10	<b>SF (per</b>	--	--	--	--	--
36.11	<b>mg/kg-day)</b>					
36.12	<b>ADAF or</b>	--	--	--	--	--
36.13	<b>AF<sub>lifetime</sub></b>					
36.14	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	--
36.15	<b>(L/kg-day)</b>					
36.16	<b>Endpoints</b>	developmental, nervous system	thyroid (E)	thyroid (E)	thyroid (E)	--
36.17						

36.18 Subp. ~~12i~~ 12n. **Naphthalene.**

36.19 CAS number: 91-20-3

36.20 Year Adopted: 2013

36.21 Volatility: Moderate

36.22		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
36.23	<b>HRL (µg/L)</b>	70	70	70 (2)	70	NA
36.24	<b>RfD</b>	0.038	0.038	(2)	0.016	--
36.25	<b>(mg/kg-day)</b>					
36.26	<b>RSC</b>	0.5	0.5	(2)	0.2	--
36.27	<b>SF (per</b>	--	--	--	--	--
36.28	<b>mg/kg-day)</b>					

37.1	<b>ADAF or</b>	--	--	--	--
37.2	<b>AF<sub>lifetime</sub></b>				
37.3	<b>Intake Rate</b>	0.289	0.289	(2)	0.043
37.4	<b>(L/kg-day)</b>				--
37.5	<b>Endpoints</b>	nervous system	nervous system	nervous system	nervous system,
37.6					spleen

Subp. 13. **Nitrate (as N).**

CAS number: 14797-55-8

Year Adopted: 2009

Volatility: Nonvolatile

MCL-based HRL: 10,000 µg/L

Subp. 13a. **p-Nonylphenol (4-Nonylphenol).**

CAS number: 84852-15-3

Year Adopted: 2021

Volatility: Nonvolatile

	<u><b>Acute</b></u>	<u><b>Short-term</b></u>	<u><b>Subchronic</b></u>	<u><b>Chronic</b></u>	<u><b>Cancer</b></u>
<u><b>HRL (µg/L)</b></u>	<u>ND</u>	<u>100</u>	<u>40</u>	<u>20</u>	<u>NA</u>
<u><b>RfD</b></u>	<u>--</u>	<u>0.21</u>	<u>0.016</u>	<u>0.0049</u>	<u>--</u>
<u><b>(mg/kg-day)</b></u>					
<u><b>RSC</b></u>	<u>--</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>--</u>
<u><b>SF (per</b></u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
<u><b>mg/kg-day)</b></u>					
<u><b>ADAF or</b></u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
<u><b>AF<sub>lifetime</sub></b></u>					
<u><b>Intake Rate</b></u>	<u>--</u>	<u>0.290</u>	<u>0.074</u>	<u>0.045</u>	<u>--</u>
<u><b>(L/kg-day)</b></u>					
<u><b>Endpoints</b></u>	<u>--</u>	<u>developmental,</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>--</u>
		<u>female</u>	<u>system</u>	<u>system</u>	
		<u>reproductive</u>			
		<u>system</u>			

38.1 Subp. 13b. **4-tert-Octylphenol.**38.2 CAS number: 140-66-938.3 Year Adopted: 202138.4 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
38.5					
38.6	<u>HRL (µg/L)</u>	<u>ND</u>	<u>100</u>	<u>100 (2)</u>	<u>NA</u>
38.7	<u>RfD</u>	<u>--</u>	<u>0.17</u>	<u>(2)</u>	<u>--</u>
38.8	<u>(mg/kg-day)</u>				
38.9	<u>RSC</u>	<u>--</u>	<u>0.2</u>	<u>(2)</u>	<u>--</u>
38.10	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
38.11	<u>mg/kg-day)</u>				
38.12	<u>ADAF or</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
38.13	<u>AF<sub>lifetime</sub></u>				
38.14	<u>Intake Rate</u>	<u>--</u>	<u>0.290</u>	<u>(2)</u>	<u>--</u>
38.15	<u>(L/kg-day)</u>				
38.16	<u>Endpoints</u>	<u>--</u>	<u>developmental</u>	<u>developmental</u>	<u>developmental</u>
					<u>--</u>

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

38.18 CAS number: 87-86-5

38.19 Year Adopted: 2015

38.20 Volatility: Low

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
38.21					
38.22	<u>HRL (µg/L)</u>	<u>7</u>	<u>7 (2)</u>	<u>7 (2)</u>	<u>0.3</u>
38.23	<u>RfD</u>	<u>0.0040</u>	<u>0.0040</u>	<u>(2)</u>	<u>--</u>
38.24	<u>(mg/kg-day)</u>				
38.25	<u>RSC</u>	<u>0.5</u>	<u>0.5</u>	<u>(2)</u>	<u>--</u>
38.26	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>0.4</u>
38.27	<u>mg/kg-day)</u>				

39.1	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
39.2	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
39.3						1 (ADAF <sub>16+</sub> )
39.4	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	0.137 <sub>(&lt;2)</sub>
39.5	<b>(L/kg-day)</b>					0.047 <sub>(2 to &lt;16)</sub>
39.6						0.039 <sub>(16+)</sub>
39.7	<b>Endpoints</b>	develop- mental, thyroid (E)	develop- mental (E), thyroid (E)	develop- mental (E), hepatic (liver) system, immune system, male reproductive system, thyroid (E)	develop- mental (E), hepatic (liver) system, immune system, male reproductive system, thyroid (E)	cancer

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

CAS number: 45187-15-3; 375-73-5

Year Adopted: ~~2011~~ 2021

Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	<del>ND</del> <u>3</u>	<u>9 3 (2)</u>	<u>7 2</u>	NA
RfD (mg/kg-day)	--	<del>--</del> <u>0.0016</u>	<del>0.0042</del> <u>(2)</u>	<del>0.0014</del> <u>0.00043</u>	--
RSC	--	<del>--</del> <u>0.5</u>	<del>0.5</del> <u>(2)</u>	0.2	--
SF (per mg/kg-day)	--	--	--	--	--
ADAF or AF <sub>lifetime</sub>	--	--	--	--	--
Intake Rate (L/kg-day)	--	<del>--</del> <u>0.290</u>	<u>0.245 (2)</u>	<u>0.043 0.045</u>	--
Endpoints	--	<del>--</del> <u>developmental, female reproductive</u>	<del>hepatic (liver) system, hematological (blood) system,</del>	<del>hepatic (liver) system, hematological (blood) system,</del>	--

40.1		<u>system (E),</u>	<del>renal (kidney)</del>	renal (kidney)	
40.2		<u>thyroid (E)</u>	<del>system</del>	system	
40.3			<u>developmental,</u>		
40.4			<u>female</u>		
40.5			<u>reproductive</u>		
40.6			<u>system (E),</u>		
40.7			<u>thyroid (E)</u>		

Subp. 14b. **Perfluorobutanoate (PFBA).**

CAS number: 45048-62-2; 375-22-4

Year Adopted: 2018

Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	7	7 (2)	7 (2)	NA
<b>RfD (mg/kg-day)</b>	--	0.0038	(2)	(2)	--
<b>RSC</b>	--	0.5	(2)	(2)	--
<b>SF (per mg/kg-day)</b>	--	--	--	--	--
<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	--
<b>Intake Rate (L/kg-day)</b>	--	0.285	(2)	(2)	--
<b>Endpoints</b>	--	hepatic (liver) system, thyroid (E)	hepatic (liver) system, thyroid (E)	hepatic (liver) system, thyroid (E)	--

Subp. 14c. **Perfluorohexane sulfonate (PFHxS) and salts.**

CAS number: 108427-53-8; 355-46-4; 3871-99-6

Year Adopted: 2021

Volatility: Nonvolatile

	<u><b>Acute</b></u>	<u><b>Short-term</b></u>	<u><b>Subchronic</b></u>	<u><b>Chronic</b></u>	<u><b>Cancer</b></u>
<u><b>HRL (µg/L)</b></u>	<u>NA</u>	<u>0.047</u>	<u>0.047</u>	<u>0.047</u>	<u>NA</u>



41.1	<b><u>RfD</u></b>	--	<u>0.0000097</u>	<u>0.0000097</u>	<u>0.0000097</u>	--
41.2	<b><u>(mg/kg-day)</u></b>					
41.3	<b><u>RSC</u></b>	--	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	--
41.4	<b><u>SF (per</u></b>	--	--	--	--	--
41.5	<b><u>mg/kg-day)</u></b>					
41.6	<b><u>ADAF or</u></b>	--	--	--	--	--
41.7	<b><u>AF<sub>lifetime</sub></u></b>					
41.8	<b><u>Intake Rate</u></b>	--	*	*	*	--
41.9	<b><u>(L/kg-day)</u></b>		--	--	--	
41.10	<b><u>Endpoints</u></b>	--	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	--
41.11			<u>system, thyroid</u>	<u>system, thyroid</u>	<u>system, thyroid</u>	
41.12			<u>(E)</u>	<u>(E)</u>	<u>(E)</u>	

41.13 \* 95th percentile water intake rates (Tables 3-1, 3-3, and 3-5 Environmental Protection  
 41.14 Agency, Exposure Factors Handbook, 2019) or upper percentile breast milk intake rates  
 41.15 (Table 15-1, Environmental Protection Agency, Exposure Factors Handbook, 2011), and  
 41.16 MDH background information.

41.17 Subp. 15. **Perfluorooctane sulfonate (PFOS) and salts.**

41.18 CAS number: 45298-90-6; 1763-23-1; 29081-56-9; 2795-39-3; 70225-14-8;  
 41.19 and 29457-72-5

41.20 Year Adopted: ~~2009~~ 2021

41.21 Volatility: Nonvolatile

41.22		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
41.23	<b>HRL (µg/L)</b>	ND	<del>ND</del> <u>0.015</u>	<del>ND</del> <u>0.015</u>	<del>0.3</del> <u>0.015</u>	NA
41.24	<b>RfD</b>	--	-- <u>0.0000031</u>	-- <u>0.0000031</u>	<del>0.00008</del>	--
41.25	<b><u>(mg/kg-day)</u></b>				<u>0.0000031</u>	
41.26	<b>RSC</b>	--	-- <u>0.5</u>	--	0.2	--
41.27	<b>SF (per</b>	--	--	--	--	--
41.28	<b><u>mg/kg-day)</u></b>					
41.29	<b>ADAF or</b>	--	--	--	--	--
41.30	<b><u>AF<sub>lifetime</sub></u></b>					

42.1	<b>Intake Rate</b>	--	-- *	-- *	<del>0.049</del> *	--
42.2	<b>(L/kg-day)</b>					
42.3	<b>Endpoints</b>	--	-- adrenal (E), developmental, hepatic (liver) system, immune system, thyroid (E)	-- adrenal (E), developmental, hepatic (liver) system, immune system, thyroid (E)	adrenal (E), developmental, hepatic (liver) system, immune system, thyroid (E)	--
42.4						
42.5						
42.6						
42.7						
42.8						

\* 95th percentile water intake rates (Tables 3-1, 3-3, and 3-5 in the Environmental Protection Agency, Exposure Factors Handbook, 2019) or upper percentile breast milk intake rates (Table 15-1, Environmental Protection Agency, Exposure Factors Handbook, 2011), and MDH background information.

Subp. 16. **Perfluorooctanoate (PFOA) and salts.**

CAS number: 45285-51-6; 335-67-1; 335-66-0; 3825-26-1; 2395-00-8; 335-93-3; and 335-95-5

Year Adopted: 2018

Volatility: Nonvolatile

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
42.18	<b>HRL (µg/L)</b>	ND	0.035	0.035	0.035	NA
42.19	<b>RfD</b>	--	0.000018	0.000018	0.000018	--
42.20	<b>(mg/kg-day)</b>					
42.21	<b>RSC</b>	--	0.5	0.5	0.5	--
42.22	<b>SF (per</b>	--	--	--	--	--
42.23	<b>mg/kg-day)</b>					
42.24	<b>ADAF or</b>	--	--	--	--	--
42.25	<b>AF<sub>lifetime</sub></b>					
42.26	<b>Intake Rate</b>	--	*	*	*	--
42.27	<b>(L/kg-day)</b>					
42.28	<b>Endpoints</b>	--	developmental, hepatic (liver) system,	developmental, hepatic (liver) system,	developmental, hepatic (liver) system, immune	--
42.29						
42.30						
42.31						

43.1		immune	immune	system, renal	
43.2		system, renal	system, renal	(kidney) system	
43.3		(kidney) system	(kidney)		
43.4			system		

\* 95th percentile water intake rates (Tables 3-1 and 3-3), or upper percentile breast milk intake rates (Table 15-1), Environmental Protection Agency (EPA) Exposure Factors Handbook, 2011.

**Subp. 16a. Pyrene.**

CAS number: 129-00-0

Year Adopted: 2018

Volatility: Moderate

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
<b>HRL (µg/L)</b>	ND	ND	90	50	NA
<b>RfD (mg/kg-day)</b>	--	--	0.033	0.010	--
<b>RSC</b>	--	--	0.2	0.2	--
<b>SF (per mg/kg-day)</b>	--	--	--	--	--
<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	--
<b>Intake Rate (L/kg-day)</b>	--	--	0.070	0.044	--
<b>Endpoints</b>	--	--	renal (kidney) system	renal (kidney) system	--

**Subp. 16b. Quinoline.**

CAS number: 91-22-5

Year Adopted: 2021

Volatility: Low

44.1		<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
44.2	<u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>4</u>	<u>0.03</u>
44.3	<u>RfD</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>0.00079</u>	<u>--</u>
44.4	<u>(mg/kg-day)</u>					
44.5	<u>RSC</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>0.2</u>	<u>--</u>
44.6	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>3</u>
44.7	<u>mg/kg-day)</u>					
44.8	<u>ADAF or</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
44.9	<u>AF<sub>lifetime</sub></u>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
44.10						<u>1 (ADAF<sub>16+</sub>)</u>
44.11						
44.12	<u>Intake Rate</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>0.045</u>	<u>0.155 (&lt;2)</u>
44.13	<u>(L/kg-day)</u>					<u>0.040 (2 to &lt;16)</u>
44.14						<u>0.042 (16+)</u>
44.15	<u>Endpoints</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>hematological</u>	<u>cancer</u>
44.16					<u>(blood)</u>	
44.17					<u>system,</u>	
44.18					<u>hepatic (liver)</u>	
44.19					<u>system, renal</u>	
44.20					<u>(kidney)</u>	
44.21					<u>system,</u>	
44.22					<u>respiratory</u>	
44.23					<u>system, and</u>	
44.24					<u>spleen</u>	

Subp. 17. **Simazine.**

CAS number: 122-34-9

Year Adopted: 2009

Volatility: Nonvolatile

MCL-based HRL: 4 µg/L

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

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

45.3 Year Adopted: 2015

45.4 Volatility: Nonvolatile

45.5		Acute	Short-term	Subchronic	Chronic	Cancer
45.6	HRL (µg/L)	ND	100	100 (2)	100 (2)	NA
45.7	RfD	--	0.040	(2)	(2)	--
45.8	(mg/kg-day)					
45.9	RSC	--	0.8	(2)	(2)	--
45.10	SF (per	--	--	--	--	--
45.11	mg/kg-day)					
45.12	ADAF or	--	--	--	--	--
45.13	AF <sub>lifetime</sub>					
45.14	Intake Rate	--	0.289	(2)	(2)	--
45.15	(L/kg-day)					
45.16	Endpoints	--	thyroid	thyroid	thyroid	--

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

45.18 CAS number: 127-18-4

45.19 Year Adopted: 2009

45.20 Volatility: High

45.21 MCL-based HRL: 5 µg/L

45.22 Subp. 18a. **Tetrahydrofuran.**

45.23 CAS number: 109-99-9

45.24 Year Adopted: 2018

45.25 Volatility: Moderate

45.26		Acute	Short-term	Subchronic	Chronic	Cancer
45.27	HRL (µg/L)	ND	600	600 (2)	600 (2)	NA

46.1	<b>RfD</b>	--	0.82	(2)	(2)	--
46.2	<b>(mg/kg-day)</b>					
46.3	<b>RSC</b>	--	0.2	(2)	(2)	--
46.4	<b>SF (per</b>	--	--	--	--	--
46.5	<b>mg/kg-day)</b>					
46.6	<b>ADAF or</b>	--	--	--	--	--
46.7	<b>AF<sub>lifetime</sub></b>					
46.8	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
46.9	<b>(L/kg-day)</b>					
46.10	<b>Endpoints</b>	--	developmental	developmental	developmental	--

Subp. 18b. **Thiamethoxam.**

CAS number: 153719-23-4

Year Adopted: 2018

Volatility: Nonvolatile

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
46.15	<b>HRL (µg/L)</b>	ND	400	200	200 (3)	NA
46.16	<b>RfD</b>	--	0.25	0.057	(3)	--
46.17	<b>(mg/kg-day)</b>					
46.18	<b>RSC</b>	--	0.5	0.2	(3)	--
46.19	<b>SF (per</b>	--	--	--	--	--
46.20	<b>mg/kg-day)</b>					
46.21	<b>ADAF or</b>	--	--	--	--	--
46.22	<b>AF<sub>lifetime</sub></b>					
46.23	<b>Intake Rate</b>	--	0.285	0.070	(3)	--
46.24	<b>(L/kg-day)</b>					
46.25	<b>Endpoints</b>	--	developmental, female reproductive system, hepatic (liver) system	male reproductive system	male reproductive system	--
46.26						
46.27						
46.28						
46.29						
46.30						

47.1 Subp. 18c. **Toluene.**

47.2 CAS number: 108-88-3

47.3 Year Adopted: 2011 2021

47.4 Volatility: High

47.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
47.6	<b>HRL (µg/L)</b>	ND	<del>200</del> <u>70</u>	<del>200 (2)</del> <u>70 (2)</u>	<del>200 (2)</del> <u>70 (2)</u>	NA
47.7	<b>RfD</b>	--	<del>0.22</del> <u>0.10</u>	(2)	(2)	--
47.8	<b>(mg/kg-day)</b>					
47.9	<b>RSC</b>	--	0.2	(2)	(2)	--
47.10	<b>SF (per</b>	--	--	--	--	--
47.11	<b>mg/kg-day)</b>					
47.12	<b>ADAF or</b>	--	--	--	--	--
47.13	<b>AF<sub>lifetime</sub></b>					
47.14	<b>Intake Rate</b>	--	<del>0.289</del> <u>0.290</u>	(2)	(2)	--
47.15	<b>(L/kg-day)</b>					
47.16	<b>Endpoints</b>	--	immune system,	immune system,	immune system,	--
47.17			nervous system	nervous system	nervous system	

47.18 Subp. 18d. **1,2,4-Trichlorobenzene.**

47.19 CAS number: 120-82-1

47.20 Year Adopted: 2013

47.21 Volatility: High

47.22		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
47.23	<b>HRL (µg/L)</b>	ND	100	100 (2)	100	4
47.24	<b>RfD</b>	--	0.17	(2)	0.021	--
47.25	<b>(mg/kg-day)</b>					
47.26	<b>RSC</b>	--	0.2	(2)	0.2	--
47.27	<b>SF (per</b>	--	--	--	--	0.029
47.28	<b>mg/kg-day)</b>					

48.1	<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
48.2						
48.3						3 (ADAF <sub>2 to &lt;16</sub> )
48.4						1 (ADAF <sub>16+</sub> )
48.5	<b>Intake Rate (L/kg-day)</b>	--	0.289	(2)	0.043	0.137 (<2)
48.6						0.047 (2 to <16)
48.7						0.039 (16+)
48.8	<b>Endpoints</b>	--	hepatic (liver) system, adrenal (E), hemato- logical (blood) system	hepatic (liver) system, adrenal (E), hemato- logical (blood) system	hepatic (liver) system, adrenal (E), renal (kidney) system	cancer
48.9						
48.10						
48.11						
48.12						
48.13						
48.14						

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

CAS number: 71-55-6

Year Adopted: 2018

Volatility: High

48.19		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
48.20	<b>HRL (µg/L)</b>	ND	ND	9,000	5,000	NA
48.21	<b>RfD (mg/kg-day)</b>	--	--	3.0	1.0	--
48.22						
48.23	<b>RSC</b>	--	--	0.2	0.2	--
48.24	<b>SF (per mg/kg-day)</b>	--	--	--	--	--
48.25						
48.26	<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--	--
48.27						
48.28	<b>Intake Rate (L/kg-day)</b>	--	--	0.070	0.044	--
48.29						
48.30	<b>Endpoints</b>	--	--	hepatic (liver) system, male	hepatic (liver) system, male	--
48.31						



49.1			reproductive	reproductive	
49.2			system	system	

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

49.4 CAS number: 79-01-6

49.5 Year Adopted: 2015

49.6 Volatility: High

49.7		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
49.8	<b>HRL (µg/L)</b>	ND	0.4	0.4	0.4 (3)	2
49.9	<b>RfD</b>	--	0.00052	0.00017	(3)	--
49.10	<b>(mg/kg-day)</b>					
49.11	<b>RSC</b>	--	0.2	0.2	(3)	--
49.12	<b>SF (per</b>	--	--	--	--	0.05
49.13	<b>mg/kg-day)</b>					
49.14	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
49.15	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
49.16						1 (ADAF <sub>16+</sub> )
49.17	<b>Intake Rate</b>	--	0.289	0.077	(3)	0.137 <sub>(&lt;2)</sub>
49.18	<b>(L/kg-day)</b>					0.047 <sub>(2 to &lt;16)</sub>
49.19						0.039 <sub>(16+)</sub>
49.20	<b>Endpoints</b>	--	develop-	develop-	develop-	cancer
49.21			mental,	mental,	mental,	
49.22			immune	immune	immune	
49.23			system	system	system	

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

49.25 CAS number: 93-72-1

49.26 Year Adopted: 2009

49.27 Volatility: Nonvolatile

49.28 MCL-based HRL: 50 µg/L

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

50.2 CAS number: 96-18-4

50.3 Year Adopted: 2013

50.4 Volatility: Moderate

50.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
50.6	<b>HRL (µg/L)</b>	7	7	7 (2)	7 (2)	0.003
50.7	<b>RfD</b>	0.0042	0.0042	(2)	(2)	--
50.8	<b>(mg/kg-day)</b>					
50.9	<b>RSC</b>	0.5	0.5	(2)	(2)	--
50.10	<b>SF (per</b>	--	--	--	--	30
50.11	<b>mg/kg-day)</b>					
50.12	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
50.13	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
50.14						1 (ADAF <sub>16+</sub> )
50.15						
50.16	<b>Intake Rate</b>	0.289	0.289	(2)	(2)	0.137 (<2)
50.17	<b>(L/kg-day)</b>					0.047 (2 to <16)
50.18						0.039 (16+)
50.19	<b>Endpoints</b>	develop-	develop-	develop-	develop-	cancer
50.20		mental	mental	mental	mental	

50.21 Subp. 21b. **1,2,3-Trimethylbenzene.**50.22 CAS number: 526-73-850.23 Year Adopted: 202150.24 Volatility: High

50.25		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
50.26	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>30</u>	<u>30 (2)</u>	<u>30 (2)</u>	<u>NA</u>
50.27	<b><u>RfD</u></b>	--	<u>0.042</u>	<u>(2)</u>	<u>(2)</u>	--
50.28	<b><u>(mg/kg-day)</u></b>					

51.1	<b><u>RSC</u></b>	--	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	--
51.2	<b><u>SF (per</u></b>	--	--	--	--	--
51.3	<b><u>mg/kg-day)</u></b>	--	--	--	--	--
51.4	<b><u>ADAF or</u></b>	--	--	--	--	--
51.5	<b><u>AF</u><sub>lifetime</sub></b>	--	--	--	--	--
51.6	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	--
51.7	<b><u>(L/kg-day)</u></b>	--	--	--	--	--
51.8	<b><u>Endpoints</u></b>	--	<u>nervous system</u>	<u>nervous system</u>	<u>nervous system</u>	--

51.9 Subp. 21c. **1,2,4-Trimethylbenzene.**

51.10 CAS number: 95-63-6

51.11 Year Adopted: 2021

51.12 Volatility: High

51.13		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
51.14	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>30</u>	<u>30 (2)</u>	<u>30 (2)</u>	<u>NA</u>
51.15	<b><u>RfD</u></b>	--	<u>0.042</u>	<u>(2)</u>	<u>(2)</u>	--
51.16	<b><u>(mg/kg-day)</u></b>	--	--	--	--	--
51.17	<b><u>RSC</u></b>	--	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	--
51.18	<b><u>SF (per</u></b>	--	--	--	--	--
51.19	<b><u>mg/kg-day)</u></b>	--	--	--	--	--
51.20	<b><u>ADAF or</u></b>	--	--	--	--	--
51.21	<b><u>AF</u><sub>lifetime</sub></b>	--	--	--	--	--
51.22	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>(2)</u>	--
51.23	<b><u>(L/kg-day)</u></b>	--	--	--	--	--
51.24	<b><u>Endpoints</u></b>	--	<u>nervous system</u>	<u>nervous system</u>	<u>nervous system</u>	--

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

51.26 CAS number: 108-67-8

51.27 Year Adopted: ~~2009~~ 2021

51.28 Volatility: High

52.1		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
52.2	<b>HRL (µg/L)</b>	ND	<del>100</del> <u>30</u>	<del>100 (2)</del> <u>30 (2)</u>	<del>100 (2)</del> <u>30 (2)</u>	NA
52.3	<b>RfD</b>	<del>ND</del> <u>--</u>	<del>0.14</del> <u>0.042</u>	(2)	(2)	--
52.4	<b>(mg/kg-day)</b>					
52.5	<b>RSC</b>	--	0.2	(2)	(2)	--
52.6	<b>SF (per</b>	--	--	--	--	--
52.7	<b>mg/kg-day)</b>					
52.8	<b>ADAF or</b>	--	--	--	--	--
52.9	<b>AF<sub>lifetime</sub></b>					
52.10	<b>Intake Rate</b>	--	<del>0.289</del> <u>0.290</u>	(2)	(2)	--
52.11	<b>(L/kg-day)</b>					
52.12	<b>Endpoints</b>	--	<del>hepatic (liver)</del> <del>system</del> <u>nervous</u> <del>system</del>	<del>hepatic (liver)</del> <del>system, renal</del> <del>(kidney)</del> <del>system</del> <u>nervous</u> <del>system</del>	<del>hepatic (liver)</del> <del>system, renal</del> <del>(kidney)</del> <del>system</del> <u>nervous</u> <del>system</del>	--
52.13						
52.14						
52.15						
52.16						
52.17						

52.18 Subp. 22a. **Tris(2-butoxyethyl) phosphate (TBEP)**

52.19 CAS number: 78-51-3

52.20 Year Adopted: 2021

52.21 Volatility: Nonvolatile

52.22		<b><u>Acute</u></b>	<b><u>Short-term</u></b>	<b><u>Subchronic</u></b>	<b><u>Chronic</u></b>	<b><u>Cancer</u></b>
52.23	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>30</u>	<u>30 (2)</u>	<u>30</u>	<u>NA</u>
52.24	<b><u>RfD</u></b>	<u>--</u>	<u>0.043</u>	<u>(2)</u>	<u>0.0074</u>	<u>--</u>
52.25	<b><u>(mg/kg-day)</u></b>					
52.26	<b><u>RSC</u></b>	<u>--</u>	<u>0.2</u>	<u>(2)</u>	<u>0.2</u>	<u>--</u>
52.27	<b><u>SF (per</u></b>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
52.28	<b><u>mg/kg-day)</u></b>					
52.29	<b><u>ADAF or</u></b>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
52.30	<b><u>AF<sub>lifetime</sub></u></b>					

53.1	<b><u>Intake Rate</u></b>	--	<u>0.290</u>	<u>(2)</u>	<u>0.045</u>	--
53.2	<b><u>(L/kg-day)</u></b>					
53.3	<b><u>Endpoints</u></b>	--	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	--
53.4			<u>system</u>	<u>system</u>	<u>system</u>	

Subp. ~~22a~~ 22b. **Tris(2-chloroethyl) phosphate.**

CAS number: 115-96-8

Year Adopted: 2013

Volatility: Low

		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
53.9	<b>HRL (µg/L)</b>	ND	300	200	200 (3)	5
53.10	<b>RfD</b>	--	0.15	0.068	(3)	--
53.11	<b>(mg/kg-day)</b>					
53.12	<b>RSC</b>	--	0.5	0.2	(3)	--
53.13	<b>SF (per</b>	--	--	--	--	0.02
53.14	<b>mg/kg-day)</b>					
53.15	<b>ADAF or</b>	--	--	--	--	10 (ADAF <sub>&lt;2</sub> )
53.16	<b>AF<sub>lifetime</sub></b>					3 (ADAF <sub>2 to &lt;16</sub> )
53.17						1 (ADAF <sub>16+</sub> )
53.18						
53.19						
53.20	<b>Intake Rate</b>	--	0.289	0.077	(3)	0.137 <sub>(&lt;2)</sub>
53.21	<b>(L/kg-day)</b>					0.047 <sub>(2 to &lt;16)</sub>
53.22						0.039 <sub>(16+)</sub>
53.23	<b>Endpoints</b>	--	renal (kidney)	renal (kidney)	renal (kidney)	cancer
53.24			system,	system	system	
53.25			nervous			
53.26			system,			
53.27			develop-			
53.28			mental			

54.1 Subp. 23. **Vinyl Chloride.**

54.2 CAS number: 75-01-4

54.3 Year Adopted: 2018

54.4 Volatility: High

54.5		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
54.6	<b>HRL (µg/L)</b>	ND	ND	90	10	0.2
54.7	<b>RfD</b>	--	--	0.033	0.0030	--
54.8	<b>(mg/kg-day)</b>					
54.9	<b>RSC</b>	--	--	0.2	0.2	--
54.10	<b>SF (per</b>	--	--	--	--	1.4
54.11	<b>mg/kg-day)</b>					
54.12	<b>AF<sub>lifetime</sub></b>	--	--	--	--	1
54.13	<b>Intake Rate</b>	--	--	0.070	0.044	0.044
54.14	<b>(L/kg-day)</b>					
54.15	<b>Endpoints</b>	--	--	hepatic (liver)	hepatic	cancer
54.16				system	(liver) system	

54.17 Subp. 23a. **Xylenes.**

54.18 CAS number: 1330-20-7

54.19 Year Adopted: ~~2011~~ 2021

54.20 Volatility: High

54.21		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
54.22	<b>HRL (µg/L)</b>	<del>800</del> <u>700</u>	300	300 <del>(2)</del>	<del>300 (2)</del> <u>300</u>	NA
54.23					<u>(3)</u>	
54.24	<b>RfD</b>	<del>1.2</del> <u>1.0</u>	<del>0.5</del> <u>0.38</u>	<del>(2)</del> <u>0.12</u>	<del>(2)</del> <u>(3)</u>	--
54.25	<b>(mg/kg-day)</b>					
54.26	<b>RSC</b>	0.2	0.2	<del>(2)</del> <u>0.2</u>	<del>(2)</del> <u>(3)</u>	--
54.27	<b>SF (per</b>	--	--	--	--	--
54.28	<b>mg/kg-day)</b>					

55.1	<b>ADAF or</b>	--	--	--	--
55.2	<b>AF<sub>lifetime</sub></b>				
55.3	<b>Intake Rate</b>	<del>0.289</del> <u>0.290</u>	<del>0.289</del> <u>0.290</u>	<del>(2)</del> <u>0.074</u>	<del>(2)</del> <u>(3)</u>
55.4	<b>(L/kg-day)</b>				--
55.5	<b>Endpoints</b>	nervous system	<u>developmental,</u> nervous system	<u>developmental,</u> renal (kidney) system, nervous system	<u>developmental,</u> renal (kidney) system, nervous system
55.6					--
55.7					
55.8					
55.9					
55.10					

Subp. 24. **Transition.** The health risk limits established for the specific chemicals in this part supersede the health risk limits for those chemicals in part 4717.7500. For chemicals not included in this part, the health risk limits established in part 4717.7500 remain in place.

**REPEALER.** Minnesota Rules, part 4717.7500, subparts 15, 34a, 54, and 61, are repealed.