

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

1.4 [For text of subps 1 to 3, see M.R.]

1.5 Subp. 3a. Acetochlor ESA.1.6 CAS number: 187022-11-31.7 Year Proposed: 20101.8 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
1.9 <u>HRL (µg/L)</u>	<u>ND</u>	<u>600</u>	<u>600</u>	<u>300</u>	<u>NA</u>
1.10 <u>RfD</u>	<u>=</u>	<u>0.37</u>	<u>0.23</u>	<u>0.075</u>	<u>=</u>
1.11 <u>(mg/kg-day)</u>					
1.12 <u>RSC</u>	<u>=</u>	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>	<u>=</u>
1.13 <u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
1.14 <u>mg/kg-day)</u>					
1.15 <u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
1.16 <u>AF</u>					
1.17 <u>lifetime</u>					
1.18 <u>Intake Rate</u>	<u>=</u>	<u>0.289</u>	<u>0.077</u>	<u>0.043</u>	<u>=</u>
1.19 <u>(L/kg-day)</u>					
1.20 <u>Endpoints</u>	<u>=</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>=</u>

1.21 Subp. 3b. Acetochlor OXA.1.22 CAS number: 184992-44-41.23 Year Proposed: 20101.24 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
1.25 <u>HRL (µg/L)</u>	<u>ND</u>	<u>200</u>	<u>200</u>	<u>100</u>	<u>NA</u>
1.26 <u>RfD</u>	<u>=</u>	<u>0.12</u>	<u>0.077</u>	<u>0.026</u>	<u>=</u>
1.27 <u>(mg/kg-day)</u>					
1.28					

2.1	<b>RSC</b>	=	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>	=
2.2	<b>SF (per</b>	=	=	=	=	=
2.3	<b>mg/kg-day)</b>					
2.4	<b>ADAF or</b>	=	=	=	=	=
2.5	<b>AF<sub>lifetime</sub></b>					
2.6	<b>Intake Rate</b>	=	<u>0.289</u>	<u>0.077</u>	<u>0.043</u>	=
2.7	<b>(L/kg-day)</b>					
2.8	<b>Endpoints</b>	=	<u>thyroid (E)</u>	<u>thyroid (E)</u>	<u>thyroid (E)</u>	=

2.9 Subp. 3c. Acetone.

2.10 CAS number: 67-64-1

2.11 Year Proposed: 2010

2.12 Volatility: Moderate

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
2.13						
2.14	<b>HRL (µg/L)</b>	<u>ND</u>	<u>9,000</u>	<u>8,000</u>	<u>4,000</u>	<u>NA</u>
2.15	<b>RfD</b>	=	<u>5.0</u>	<u>3.0</u>	<u>0.90</u>	=
2.16	<b>(mg/kg-day)</b>					
2.17	<b>RSC</b>	=	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>	=
2.18	<b>SF (per</b>	=	=	=	=	=
2.19	<b>mg/kg-day)</b>					
2.20	<b>ADAF or</b>	=	=	=	=	=
2.21	<b>AF<sub>lifetime</sub></b>					
2.22	<b>Intake Rate</b>	=	<u>0.289</u>	<u>0.077</u>	<u>0.043</u>	=
2.23	<b>(L/kg-day)</b>					
2.24	<b>Endpoints</b>	=	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	=
2.25			<u>system</u>	<u>system,</u>	<u>system,</u>	
2.26				<u>hematological</u>	<u>hematological</u>	
2.27				<u>(blood) system</u>	<u>(blood) system</u>	

2.28 [For text of subps 4 to 8, see M.R.]

2.29 Subp. 8a. Dichlorodifluoromethane.

3.1 CAS number: 75-71-8

3.2 Year Proposed: 2010

3.3 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
3.4 <u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>700</u>	<u>NA</u>
3.5 <u>RfD</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.15</u>	<u>=</u>
3.6 <u>(mg/kg-day)</u>					
3.7 <u>RSC</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.2</u>	<u>=</u>
3.8 <u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
3.9 <u>mg/kg-day)</u>					
3.10 <u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
3.11 <u>AF</u>					
3.12 <u>lifetime</u>					
3.13 <u>Intake Rate</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.043</u>	<u>=</u>
3.14 <u>(L/kg-day)</u>					
3.15 <u>Endpoints</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>None</u>	<u>=</u>

3.16 Subp. 8b. 1,1-Dichloroethylene.

3.17 CAS number: 75-35-4

3.18 Year Proposed: 2010

3.19 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
3.20 <u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>200</u>	<u>200</u>	<u>NA</u>
3.21 <u>RfD</u>	<u>=</u>	<u>=</u>	<u>0.090</u>	<u>0.046</u>	<u>=</u>
3.22 <u>(mg/kg-day)</u>					
3.23 <u>RSC</u>	<u>=</u>	<u>=</u>	<u>0.2</u>	<u>0.2</u>	<u>=</u>
3.24 <u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
3.25 <u>mg/kg-day)</u>					
3.26 <u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
3.27 <u>AF</u>					
3.28 <u>lifetime</u>					

4.1	<b><u>Intake Rate</u></b>	=	=	<u>0.077</u>	<u>0.043</u>	=
4.2	<b><u>(L/kg-day)</u></b>					
4.3	<b><u>Endpoints</u></b>	=	=	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	=
4.4				<u>system</u>	<u>system</u>	

4.5 [For text of subps 9 to 12, see M.R.]

4.6 Subp. 12a. Ethylbenzene.

4.7 CAS number: 100-41-4

4.8 Year Proposed: 2010

4.9 Volatility: High

	<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>	
4.10						
4.11	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>50</u>	<u>50 (2)</u>	<u>50 (2)</u>	<u>NA</u>
4.12	<b><u>RfD</u></b>	=	<u>0.075</u>	<u>(2)</u>	<u>(2)</u>	=
4.13	<b><u>(mg/kg-day)</u></b>					
4.14	<b><u>RSC</u></b>	=	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	=
4.15	<b><u>SF (per</u></b>	=	=	=	=	=
4.16	<b><u>mg/kg-day)</u></b>					
4.17	<b><u>ADAF or</u></b>	=	=	=	=	=
4.18	<b><u>AF<sub>lifetime</sub></u></b>					
4.19	<b><u>Intake Rate</u></b>	=	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	=
4.20	<b><u>(L/kg-day)</u></b>					
4.21	<b><u>Endpoints</u></b>	=	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	=
4.22			<u>system, renal</u>	<u>system, renal</u>	<u>system, renal</u>	
4.23			<u>(kidney)</u>	<u>(kidney)</u>	<u>(kidney)</u>	
4.24			<u>system</u>	<u>system</u>	<u>system</u>	

4.25 Subp. 12b. Ethylene glycol.

4.26 CAS number: 107-21-1

4.27 Year Proposed: 2010

4.28 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
5.1						
5.2	<u>HRL (µg/L)</u>	<u>4,000</u>	<u>4,000</u>	<u>2,000</u>	<u>2,000</u>	<u>NA</u>
5.3	<u>RfD</u>	<u>0.76</u>	<u>0.76</u>	<u>0.72</u>	<u>0.50</u>	<u>=</u>
5.4	<u>(mg/kg-day)</u>					
5.5	<u>RSC</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>=</u>
5.6	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
5.7	<u>mg/kg-day)</u>					
5.8	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
5.9	<u>AF</u> <sub>lifetime</sub>					
5.10	<u>Intake Rate</u>	<u>0.043</u>	<u>0.043</u>	<u>0.077</u>	<u>0.043</u>	<u>=</u>
5.11	<u>(L/kg-day)</u>					
5.12	<u>Endpoints</u>	<u>developmental</u>	<u>developmental</u>	<u>renal (kidney)</u>	<u>renal (kidney)</u>	<u>=</u>
5.13				<u>system,</u>	<u>system,</u>	
5.14				<u>developmental</u>	<u>developmental</u>	

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

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

5.17 Year Proposed: 2010

5.18 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
5.19						
5.20	<u>HRL (µg/L)</u>	<u>400</u>	<u>400</u>	<u>300</u>	<u>300 (3)</u>	<u>NA</u>
5.21	<u>RfD</u>	<u>0.24</u>	<u>0.24</u>	<u>0.097</u>	<u>(3)</u>	<u>=</u>
5.22	<u>(mg/kg-day)</u>					
5.23	<u>RSC</u>	<u>0.5</u>	<u>0.5</u>	<u>0.2</u>	<u>(3)</u>	<u>=</u>
5.24	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
5.25	<u>mg/kg-day)</u>					
5.26	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
5.27	<u>AF</u> <sub>lifetime</sub>					
5.28	<u>Intake Rate</u>	<u>0.289</u>	<u>0.289</u>	<u>0.077</u>	<u>(3)</u>	<u>=</u>
5.29	<u>(L/kg-day)</u>					
5.30	<u>Endpoints</u>	<u>developmental</u>	<u>developmental</u>	<u>none</u>	<u>none</u>	<u>=</u>

5.31 Subp. 12d. **Metolachlor ESA.**

6.1 CAS number: 171118-09-56.2 Year Proposed: 20106.3 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
6.4 <u>HRL (µg/L)</u>	<u>ND</u>	<u>ND</u>	<u>4,000</u>	<u>800</u>	<u>NA</u>
6.5 <u>RfD</u>	<u>=</u>	<u>=</u>	<u>1.7</u>	<u>0.17</u>	<u>=</u>
6.6 <u>(mg/kg-day)</u>					
6.7 <u>RSC</u>	<u>=</u>	<u>=</u>	<u>0.2</u>	<u>0.2</u>	<u>=</u>
6.8 <u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
6.9 <u>mg/kg-day)</u>					
6.10 <u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
6.11 <u>AF</u>					
6.12 <u>lifetime</u>					
6.13 <u>Intake Rate</u>	<u>=</u>	<u>=</u>	<u>0.077</u>	<u>0.043</u>	<u>=</u>
6.14 <u>(L/kg-day)</u>					
6.15 <u>Endpoints</u>	<u>=</u>	<u>=</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>=</u>
6.16			<u>system</u>	<u>system</u>	

6.17 Subp. 12e. **Metolachlor OXA.**6.18 CAS number: 152019-73-36.19 Year Proposed: 20106.20 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
6.21 <u>HRL (µg/L)</u>	<u>ND</u>	<u>3,000</u>	<u>3,000 (2)</u>	<u>800</u>	<u>NA</u>
6.22 <u>RfD</u>	<u>=</u>	<u>1.7</u>	<u>(2)</u>	<u>0.17</u>	<u>=</u>
6.23 <u>(mg/kg-day)</u>					
6.24 <u>RSC</u>	<u>=</u>	<u>0.5</u>	<u>(2)</u>	<u>0.2</u>	<u>=</u>
6.25 <u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
6.26 <u>mg/kg-day)</u>					
6.27 <u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
6.28 <u>AF</u>					
6.29 <u>lifetime</u>					

7.1	<b><u>Intake Rate</u></b>	<u>—</u>	<u>0.289</u>	<u>(2)</u>	<u>0.043</u>	<u>—</u>
7.2	<b><u>(L/kg-day)</u></b>					
7.3	<b><u>Endpoints</u></b>	<u>—</u>	<u>none</u>	<u>none</u>	<u>none</u>	<u>—</u>

7.4 [For text of subs 13 and 14, see M.R.]

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

7.6 CAS number: 375-73-5

7.7 Year Proposed: 2010

7.8 Volatility: Nonvolatile

7.9		<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>
7.10	<b><u>HRL (µg/L)</u></b>	<u>ND</u>	<u>ND</u>	<u>9</u>	<u>7</u>	<u>NA</u>
7.11	<b><u>RfD</u></b>	<u>—</u>	<u>—</u>	<u>0.0042</u>	<u>0.0014</u>	<u>—</u>
7.12	<b><u>(mg/kg-day)</u></b>					
7.13	<b><u>RSC</u></b>	<u>—</u>	<u>—</u>	<u>0.5</u>	<u>0.2</u>	<u>—</u>
7.14	<b><u>SF (per</u></b>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
7.15	<b><u>mg/kg-day)</u></b>					
7.16	<b><u>ADAF or</u></b>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
7.17	<b><u>AF</u></b> <u>lifetime</u>					
7.18	<b><u>Intake Rate</u></b>	<u>—</u>	<u>—</u>	<u>0.245</u>	<u>0.043</u>	<u>—</u>
7.19	<b><u>(L/kg-day)</u></b>					
7.20	<b><u>Endpoints</u></b>	<u>—</u>	<u>—</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>—</u>
7.21				<u>system,</u>	<u>system,</u>	
7.22				<u>hematological</u>	<u>hematological</u>	
7.23				<u>(blood) system,</u>	<u>(blood) system,</u>	
7.24				<u>renal (kidney)</u>	<u>renal (kidney)</u>	
7.25				<u>system</u>	<u>system</u>	

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

7.27 CAS number: 375-22-4

7.28 Year Proposed: 2010

7.29 Volatility: Nonvolatile

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
8.1						
8.2	<u>HRL (µg/L)</u>	<u>ND</u>	<u>7</u>	<u>7 (2)</u>	<u>7 (2)</u>	<u>NA</u>
8.3	<u>RfD</u>	<u>=</u>	<u>0.0038</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
8.4	<u>(mg/kg-day)</u>					
8.5	<u>RSC</u>	<u>=</u>	<u>0.5</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
8.6	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
8.7	<u>mg/kg-day)</u>					
8.8	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
8.9	<u>AF</u> <sub>lifetime</sub>					
8.10	<u>Intake Rate</u>	<u>=</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
8.11	<u>(L/kg-day)</u>					
8.12	<u>Endpoints</u>	<u>=</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>=</u>
8.13			<u>system; thyroid</u>	<u>system; thyroid</u>	<u>system; thyroid</u>	
8.14			<u>(E)</u>	<u>(E)</u>	<u>(E)</u>	

8.15 [For text of subps 15 to 18, see M.R.]

8.16 Subp. 18a. Toluene.

8.17 CAS number: 108-88-3

8.18 Year Proposed: 2010

8.19 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
8.20						
8.21	<u>HRL (µg/L)</u>	<u>ND</u>	<u>200</u>	<u>200 (2)</u>	<u>200 (2)</u>	<u>NA</u>
8.22	<u>RfD</u>	<u>=</u>	<u>0.22</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
8.23	<u>(mg/kg-day)</u>					
8.24	<u>RSC</u>	<u>=</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	<u>=</u>
8.25	<u>SF (per</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
8.26	<u>mg/kg-day)</u>					
8.27	<u>ADAF or</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>
8.28	<u>AF</u> <sub>lifetime</sub>					

9.1	<b><u>Intake Rate</u></b>	=	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	=
9.2	<b><u>(L/kg-day)</u></b>					
9.3	<b><u>Endpoints</u></b>	=	<u>immune system,</u>	<u>immune system,</u>	<u>immune system,</u>	=
9.4			<u>nervous system</u>	<u>nervous system</u>	<u>nervous system</u>	

9.5 [For text of subps 19 to 23, see M.R.]

9.6 Subp. 23a. Xylenes.

9.7 CAS number: 1330-20-7

9.8 Year Proposed: 2010

9.9 Volatility: High

	<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>	
9.10						
9.11	<u>HRL (µg/L)</u>	<u>800</u>	<u>300</u>	<u>300 (2)</u>	<u>300 (2)</u>	<u>NA</u>
9.12	<u>RfD</u>	<u>1.2</u>	<u>0.5</u>	<u>(2)</u>	<u>(2)</u>	=
9.13	<u>(mg/kg-day)</u>					
9.14	<u>RSC</u>	<u>0.2</u>	<u>0.2</u>	<u>(2)</u>	<u>(2)</u>	=
9.15	<u>SF (per</u>	=	=	=	=	=
9.16	<u>mg/kg-day)</u>					
9.17	<u>ADAF or</u>	=	=	=	=	=
9.18	<u>AF<sub>lifetime</sub></u>					
9.19	<u>Intake Rate</u>	<u>0.289</u>	<u>0.289</u>	<u>(2)</u>	<u>(2)</u>	=
9.20	<u>(L/kg-day)</u>					
9.21	<u>Endpoints</u>	<u>nervous system</u>	<u>nervous system</u>	<u>renal (kidney)</u>	<u>renal</u>	=
9.22				<u>system,</u>	<u>(kidney)</u>	
9.23				<u>nervous</u>	<u>system,</u>	
9.24				<u>system</u>	<u>nervous</u>	
9.25					<u>system</u>	

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

9.27 **REPEALER.** Minnesota Rules, part 4717.7500, subparts 3, 3a, 6a, 8, 14, 25, 36, 39a, 40a,  
 9.28 41, 43, 46, 50, 52, 52a, 61, 65, 68, 70, 77a, 78b, 79, 80a, 81a, 85, 88b, and 89, are repealed.