

# Office of the Revisor of Statutes

## Administrative Rules



**TITLE:** Proposed Permanent Rules Related to Health Risk Limits

**AGENCY:** Department of Health

**REVISOR ID:** R-4803

**MINNESOTA RULES:** Chapter 4717

The attached rules are approved for  
publication in the State Register

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1.1 **Department of Health**

1.2 **Proposed Permanent Rules Related to Health Risk Limits**

1.3 **4717.7860 HEALTH RISK LIMITS TABLE.**

1.4 *[For text of subparts 1 to 7, see Minnesota Rules]*

1.5 Subp. 7a. [Renumbered subp 7c]

1.6 Subp. 7b. Chlorothalonil.

1.7 CAS number: 1897-45-6

1.8 Year Adopted: 2025

1.9 Volatility: Nonvolatile

	<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>20</u>	<u>2</u>	<u>1</u>	<u>6</u>
<u>RfD (mg/kg-day)</u>	--	<u>0.014</u>	<u>0.00067</u>	<u>0.00029</u>	--
<u>RSC</u>	--	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>	--
<u>SF (per mg/kg-day)</u>	--	--	--	--	<u>0.017</u>
<u>ADAF or AF<sub>lifetime</sub></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>0.290</u>	<u>0.074</u>	<u>0.045</u>	<u>0.155 (&lt;2)</u> <u>0.040 (2 to &lt;16)</u> <u>0.042 (16+)</u>
<u>Endpoints</u>	--	<u>gastrointestinal system</u>	<u>gastrointestinal system</u>	<u>gastro-intestinal system, hepatic (liver) system, renal (kidney) system</u>	<u>cancer</u>

2.1 Subp. ~~7a~~ 7c. **Clothianidin.**

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

2.3 Year Adopted: 2018

2.4 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
2.5						
2.6	<b>HRL (µg/L)</b>	ND	200	200 (2)	200 (2)	NA
2.7	<b>RfD</b>	--	0.093	(2)	(2)	--
2.8	<b>(mg/kg-day)</b>					
2.9	<b>RSC</b>	--	0.5	(2)	(2)	--
2.10	<b>SF (per</b>	--	--	--	--	--
2.11	<b>mg/kg-day)</b>					
2.12	<b>ADAF or</b>	--	--	--	--	--
2.13	<b>AF<sub>lifetime</sub></b>					
2.14	<b>Intake Rate</b>	--	0.285	(2)	(2)	--
2.15	<b>(L/kg-day)</b>					
2.16	<b>Endpoints</b>	--	developmental	developmental	developmental	--

2.17 Subp. ~~8~~ 7d. **Cyanazine.**

2.18 CAS number: 21725-46-2

2.19 Year Adopted: 2018

2.20 Volatility: Nonvolatile

	<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>	
2.21						
2.22	<b>HRL (µg/L)</b>	3	3	3	1	NA
2.23	<b>RfD</b>	0.0015	0.0015	0.0012	0.00022	--
2.24	<b>(mg/kg-day)</b>					
2.25	<b>RSC</b>	0.5	0.5	0.2	0.2	--
2.26	<b>SF (per</b>	--	--	--	--	--
2.27	<b>mg/kg-day)</b>					
2.28	<b>ADAF or</b>	--	--	--	--	--
2.29	<b>AF<sub>lifetime</sub></b>					

3.1	<b>Intake Rate</b>	0.285	0.285	0.070	0.044	--
3.2	<b>(L/kg-day)</b>					
3.3	<b>Endpoints</b>	developmental,	developmental,	developmental,	None	--
3.4		female	female	female		
3.5		reproductive	reproductive	reproductive		
3.6		system	system	system,		
3.7				hepatic (liver)		
3.8				system, renal		
3.9				(kidney)		
3.10				system		

3.11 Subp. 7e. 1,2-Dibromoethane (EDB).

3.12 CAS number: 106-93-4

3.13 Year Adopted: 2025

3.14 Volatility: High

3.15		<u>Acute</u>	<u>Short-term</u>	<u>Subchronic</u>	<u>Chronic</u>	<u>Cancer</u>
3.16	<u>HRL (µg/L)</u>	<u>ND</u>	<u>10</u>	<u>10 (2)</u>	<u>9</u>	<u>0.03</u>
3.17	<u>RfD</u>	<u>--</u>	<u>0.018</u>	<u>(2)</u>	<u>0.0021</u>	<u>--</u>
3.18	<u>(mg/kg-day)</u>					
3.19	<u>RSC</u>	<u>--</u>	<u>0.2</u>	<u>(2)</u>	<u>0.2</u>	<u>--</u>
3.20	<u>SF (per</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>3.6</u>
3.21	<u>mg/kg-day)</u>					
3.22	<u>ADAF or</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>10 (ADAF<sub>&lt;2</sub>)</u>
3.23	<u>AF<sub>lifetime</sub></u>					<u>3 (ADAF<sub>2 to &lt;16</sub>)</u>
3.24						<u>1 (ADAF<sub>16+</sub>)</u>
3.25						
3.26	<u>Intake Rate</u>	<u>--</u>	<u>0.290</u>	<u>(2)</u>	<u>0.045</u>	<u>0.155 (&lt;2)</u>
3.27	<u>(L/kg-day)</u>					<u>0.040 (2 to &lt;16)</u>
3.28						<u>0.042 (16+)</u>
3.29	<u>Endpoints</u>	<u>--</u>	<u>female</u>	<u>female</u>	<u>female</u>	<u>cancer</u>
3.30			<u>reproductive</u>	<u>reproductive</u>	<u>reproductive</u>	
3.31			<u>system,</u>	<u>system,</u>	<u>system,</u>	
3.32			<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	
3.33			<u>system,</u>	<u>system,</u>	<u>system,</u>	
3.34			<u>immune</u>	<u>immune</u>	<u>immune</u>	

4.1		<u>system, male</u>	<u>system, male</u>	<u>system, male</u>	
4.2		<u>reproductive</u>	<u>reproductive</u>	<u>reproductive</u>	
4.3		<u>system, renal</u>	<u>system, renal</u>	<u>system,</u>	
4.4		<u>(kidney)</u>	<u>(kidney)</u>	<u>respiratory</u>	
4.5		<u>system,</u>	<u>system,</u>	<u>system</u>	
4.6		<u>respiratory</u>	<u>respiratory</u>		
4.7		<u>system,</u>	<u>system,</u>		
4.8		<u>spleen</u>	<u>spleen</u>		

4.9 Subp. 8. [Renumbered subp 7d]

4.10 [For text of subparts 8a to 8f, see Minnesota Rules]

4.11 Subp. 8g. [See repealer.]

4.12 [For text of subparts 8h to 14d, see Minnesota Rules]

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

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

4.16 Year Adopted: ~~2009~~ 2025

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	<del>ND</del> <u>0.0023</u>	<del>ND</del> <u>0.0023</u>	<del>0.3</del> <u>0.0023</u>	<del>NA</del> <u>0.0076</u>
4.20						
4.21	<b>RfD</b>	--	-- <u>2.6</u>	-- <u>2.6</u>	<del>0.00008</del> <u>2.6</u>	--
4.22	<b>(mg/kg-day)</b>					
4.23	<b>RfSC</b>					
4.24	<b>(ng/mL)*</b>					
4.25	<b>RSC</b>	--	-- <u>0.2</u>	-- <u>0.2</u>	0.2	--
4.26	<b>SF (per</b>	--	--	--	--	-- <u>13</u>
4.27	<b>mg/kg-day)</b>					
4.28	<b>ADAF or</b>	--	--	--	--	-- <u>10</u>
4.29	<b>AF<sub>lifetime</sub></b>					<u>(ADAF<sub>2</sub>)</u>
4.30						<u>3</u>
4.31						<u>(ADAF<sub>2</sub>)</u>
4.32						<u>to &lt;16)</u>

5.1					<u>1</u>
5.2					<u>(ADAF</u>
5.3					<u>16+)</u>
5.4	<b>Intake Rate</b>	--	-- #	-- #	0.049 #
5.5	<b>(L/kg-day)</b>				-- 0.155
5.6					<u>(≤2)</u>
5.7					<u>0.040</u> (2
5.8					<u>to &lt;16)</u>
5.9					<u>0.042</u>
5.10	<b>Endpoints</b>	--	--	--	developmental, -- cancer
5.11			<u>developmental,</u>	<u>developmental,</u>	hepatic (liver)
5.12			<u>hepatic (liver)</u>	<u>hepatic (liver)</u>	system, thyroid
5.13			<u>system, immune</u>	<u>system, immune</u>	(E) immune
5.14			<u>system</u>	<u>system</u>	system

5.15 \* A reference serum concentration (ng/mL) rather than a reference dose (mg/kg-d) was used  
 5.16 in MDH's toxicokinetic model to calculate noncancer guidance values for PFOS.

5.17 # 95th percentile water intake rates (Tables 3-1, 3-3, and 3-5 in the Environmental Protection  
 5.18 Agency, Exposure Factors Handbook, 2019), or upper percentile breast milk intake rates  
 5.19 (Table 15-1), Environmental Protection Agency Exposure Factors Handbook, 2011.

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

5.21 CAS number: 45285-51-6; 335-67-1; ~~335-66-0~~; 3825-26-1; 2395-00-8;  
 5.22 335-93-3; and 335-95-5

5.23 Year Adopted: ~~2018~~ 2025

5.24 Volatility: Nonvolatile

5.25		<b>Acute</b>	<b>Short-term</b>	<b>Subchronic</b>	<b>Chronic</b>	<b>Cancer</b>
5.26	<b>HRL (µg/L)</b>	ND	<del>0.035</del> <u>0.00024</u>	<del>0.035</del> <u>0.00024</u>	<del>0.035</del> <u>0.00024</u>	<del>NA</del>
5.27						<u>0.0000079</u>
5.28	<b>RfD</b>	--	<del>0.000018</del> <u>0.93</u>	<del>0.000018</del> <u>0.93</u>	<del>0.000018</del> <u>0.93</u>	--
5.29	<b>(mg/kg-day)</b>					
5.30	<b>RfSC</b>					
5.31	<b>(ng/mL)*</b>					
5.32	<b>RSC</b>	--	<del>0.5</del> <u>0.2</u>	<del>0.5</del> <u>0.2</u>	<del>0.5</del> <u>0.2</u>	--

6.1	<b>SF (per mg/kg-day ng/kg-day)</b>	--	--	--	--	-- 0.0126		
6.2		<b>ADAF or AF<sub>lifetime</sub></b>	--	--	--	--		
6.3			--	--	--	--	-- 10 (ADAF <sub>&lt;2</sub> ) 3 (ADAF <sub>2</sub> to <16) 1 (ADAF <sub>16+</sub> )	
6.4	<b>Intake Rate (L/kg-day)</b>		--	* #	* #	* #	-- 0.155 (<2) 0.040 (2 to <16) 0.042 (16+)	
6.5			<b>Endpoints</b>	--	developmental, hepatic (liver) system, immune system, renal (kidney) system	developmental, hepatic (liver) system, immune system, renal (kidney) system	developmental, hepatic (liver) system, immune system, renal (kidney) system	
6.6				--	--	--	--	-- cancer
6.7				--	--	--	--	--
6.8	--	--	--	--	--	--		
6.9	--	--	--	--	--	--		

6.22 \* A reference serum concentration (ng/mL) rather than a reference dose (mg/kg-d) was used  
6.23 in MDH's toxicokinetic model to calculate noncancer guidance values for PFOA.

6.24 \* # 95th percentile water intake rates (Tables 3-1 and 3-3, and 3-5 in the Environmental  
6.25 Protection Agency, Exposure Factors Handbook, 2019), or upper percentile breast milk  
6.26 intake rates (Table 15-1), Environmental Protection Agency (EPA) Exposure Factors  
6.27 Handbook, 2011.

6.28 *[For text of subparts 16a to 24, see Minnesota Rules]*

6.29 **REPEALER.** Minnesota Rules, parts 4717.7500, subparts 5, 26a, and 31; and 4717.7860,  
6.30 subpart 8g, are repealed.