

Health Risk Limit Proposed Rules Amendments, 2023 - 2025

REVISOR'S ID NUMBER 4803 NARRATIVE DESCRIPTION

October 28, 2024

Overview

The following tables provide a description of the proposed changes to the Health Risk Limit (HRL) Rules for 2023 to 2025. The HRL Rules reflect concentrations of a contaminant in groundwater that are expected to pose little to no health risk when the water containing the contaminant is consumed for a certain time.

This document does not represent a certified copy of the proposed rules. This document is provided only as an alternative way to access information that will be provided in the certified copy of the proposed HRL Rules. The traditional use of strikethrough and underlining to indicate changes cannot be read by screen readers and some other assistive technologies. The words "Delete" and "Add" are therefore used before the sections to be updated in place of strikethrough and underlines, respectively, to indicate changes. A certified copy of the proposed rules with strikethrough and underlining will be also posted when it is available from the Office of the Revisor. If you have questions about the proposed rules or require access to the proposed rules in a different format, please contact the Health Risk Assessment Unit at health.risk@state.mn.us.

Abbreviations:

(Many of the terms below are further defined in the [Health-Based Water Guidance Glossary \(https://www.health.state.mn.us/communities/environment/risk/docs/rules/hrlglossary.pdf\)](https://www.health.state.mn.us/communities/environment/risk/docs/rules/hrlglossary.pdf))

ADAF = Age-Dependent Adjustment Factor

AFlifetime = Lifetime Adjustment Factor

HRL = Health Risk Limit

MDH = Minnesota Department of Health

NA = Not Applicable

ND = Not Derived

RfD = Reference Dose

RSC = Relative Source Contribution

SF = Slope Factor

Subp - Subpart

Deletions from Minnesota Rules parts 4717.7500 for Health Risk Limits

Minnesota Department of Health (MDH) is proposing the following: Subparts 26a (**Chlorothalonil**) and 31 (**1,2-Dibromoethane**) will be deleted from Minnesota Rules 4717.7500 and updated values will be added to Minnesota Rules 4717.7860 as subparts 7b and 7e, respectively. The updates are described in the section called “Proposed Amendments to Minnesota Rules part 4717.7860 Health Risk Limits Table” below.

Minnesota Rules 4717.7500, subpart 5, **Anthracene, will be repealed and not replaced.** MDH has developed new Risk Assessment Advice to replace the former HRL value for this chemical, now posted on the [Human Health-Based Water Guidance Values Table](https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html) (<https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html>).

Proposed deletions from Minnesota Rules parts 4717.7500.

Subpart	CAS RN	RfD* (milligrams per kilogram per day)	Slope factor* (the inverse of milligrams per kilogram per day)	Health Risk Limit (micrograms per liter)
Minnesota Rules part 4717.7500 subpart 5: Anthracene	[Delete: 120-12-7]	[Delete: 0.3]	[Delete: -]	[Delete: 2,000]
Minnesota Rules part 4717.7500 subpart 26a: Chlorothalonil	[Delete: 1897-45-6]	[Delete: --]	[Delete: 0.011]	[Delete: 30]
Minnesota Rules part 4717.7500 subpart 31: 1,2-Dibromoethane (Ethylene dibromide, EDB)	[Delete: 124-48-1]	[Delete: 0.02 (C)]	[Delete: -]	[Delete: 10]

Deletions from Minnesota Rules parts 4717.7860 for Health Risk Limits

Proposed deletions from Minnesota Rules parts 4717.7860.

Minnesota Rules 4717.7860, subpart 8g, **Dichlorodifluoromethane, will be repealed and not replaced.** MDH has developed new Risk Assessment Advice to replace the former HRL value for this chemical, now posted on the [Human Health-Based Water Guidance Values Table](https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html) (<https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html>).

This change outlined in the table below.

[Delete: Subp. 8g. Dichlorodifluoromethane.]

[Delete: CAS number: 75-71-8]

[Delete: Year Adopted: 2011]

[Delete: Volatility: Nonvolatile]

[Delete: full table below for Dichlorodifluoromethane]

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	ND	ND	[Delete: 700]	NA
RFD (mg/kg-day)	--	--	--	[Delete: 0.15]	--
RSC	--	--	--	[Delete: 0.2]	--
SF (per mg/kg-day)	--	--	--	[Delete: --]	--
ADAF or AF _{lifetime}	--	--	--	[Delete: --]	--
Intake Rate (L/kg-day)	--	--	--	[Delete: 0.043]	--
Endpoints	--	--	--	[Delete: None]	--

Proposed Amendments to Minnesota Rules part 4717.7860 Health Risk Limits Table

Other additions or amendments are as follows:

[Add: Subp. 7b. Chlorothalonil]

CAS number: 1897-45-6

Year Adopted: 2025

Volatility: Nonvolatile]

[Add: All information in table below for Chlorothalonil]

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	20	2	1	6
RFD (mg/kg-day)	--	0.014	0.00067	0.00029	--
RSC	--	0.5	0.2	0.2	--

	Acute	Short-term	Subchronic	Chronic	Cancer
SF (per mg/kg-day)	--	--	--	--	0.017
ADAF or AF _{lifetime}	--	--	--	--	10 (ADAF _{<2}) 3 (ADAF _{2 to <16}) 1 (ADAF ₁₆₊)
Intake Rate (L/kg-day)	--	0.290	0.074	0.045	0.155 _{<2} 0.040 _(2 to <16) 0.042 ₍₁₆₊₎
Endpoints	--	gastrointestinal system	gastrointestinal system	gastrointestinal system, hepatic (liver) system, renal (kidney) system	cancer

For text of subparts 7b to 7d, see [Minnesota Rules 4717.7860](#)

[Add: Subp. 7e. 1,2-Dibromoethane (EDB).]

[Add: CAS number: 106-93-4]

[Add: Year Adopted: 2025]

[Add: Volatility: High]

[Add: information in the table below for 1,2-Dibromoethane (EDB)]

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	10	10 (2)	9	0.03
RFD (mg/kg-day)	--	0.018	(2)	0.0021	--
RSC	--	0.2	(2)	0.2	
SF (per mg/kg-day)	--	--	--	--	3.6
ADAF or AF _{lifetime}	--	--	--	--	10 (ADAF _{<2}) 3 (ADAF _{2 to <16}) 1 (ADAF ₁₆₊)
Intake Rate (L/kg-day)	--	0.290	(2)	0.045	0.155 _{<2} 0.040 _(2 to <16) 0.042 ₍₁₆₊₎

	Acute	Short-term	Subchronic	Chronic	Cancer
Endpoints	--	female reproductive system, hepatic (liver) system, immune system, male reproductive system, renal (kidney) system, respiratory system, spleen	female reproductive system, hepatic (liver) system, immune system, male reproductive system, renal (kidney) system, respiratory system, spleen	female reproductive system, hepatic (liver) system, immune system, male reproductive system, respiratory system	cancer

For text of subparts 8 to 14d, see [Minnesota Rules 4717.7860](#)

[Update the information as shown below for Perfluorooctane sulfonate (PFOS) and salts.

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

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

Year Adopted: [Delete: 2009, Add:2025]

Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	[Delete: ND Add: 0.0023]	[Delete: ND Add: 0.0023]	[Delete: 0.03 Add: 0.0023]	[Delete: NA Add: 0.0076]
[Delete :RfD (mg/kg-day) Add: RfSC] (ng/mL)*]	--	[Delete:-- Add: 2.6]	[Delete:-- Add: 2.6]	[Delete:0.00008 Add: 2.6]	--
RSC	--	[Delete:-- Add: 0.2]	[Delete:-- Add: 0.2]	0.2	
SF (per mg/kg-day)	--	--	--	--	[Delete:-- Add: 13]

	Acute	Short-term	Subchronic	Chronic	Cancer
ADAF or AF _{lifetime}	--	--	--	--	[Delete:-- Add: 10 (ADAF<2) 3 (ADAF2 to <16) 1 (ADAF16+)]
Intake Rate (L/kg-day)	--	[Delete: -- Add: #]	[Delete: -- Add: #]	[Delete:0.049 Add: #]	[Delete: -- Add: 0.155(<2) 0.040(2 to <16) 0.042 (16+)]
Endpoints	--	[Delete: – Add: developmental, hepatic (liver) system, immune system]	[Delete:-- Add: developmental, hepatic (liver) system, immune system]	developmental, hepatic (liver) system, [Delete: thyroid (E) Add: immune system]	[Delete: -- Add: cancer]

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

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.]

Subp. 16. Perfluorooctanoate (PFOA) and salts.

CAS numbers: 45285-51-6; 335-67-1; [Delete: 335-66-0]; 3825-26-1; 2395-00-8; 335-93-3; 335-95-5

Year Adopted: [Delete: 2018, Add: 2025]

Volatility: Nonvolatile

	Acute	Short-term	Subchronic	Chronic	Cancer
HRL (µg/L)	ND	[Delete: 0.035 Add: 0.00024]	[Delete: 0.035 Add 0.00024]	[Delete: 0.035 Add 0.00024]	[Delete: NA Add 0.0000079]

	Acute	Short-term	Subchronic	Chronic	Cancer
[Delete :RfD (mg/kg-day) Add: RfSC] (ng/mL)*]	--	[Delete 0.000018 Add: 0.93]	[Delete 0.000018 Add: 0.93]	[Delete 0.000018 Add: 0.93]	--
RSC	--	[Delete: 0.5 Add: 0.2]	[Delete: 0.5 Add: 0.2]	[Delete: 0.5 Add: 0.2]	--
SF (per Delete: mg/kg-day) Add: ng/kg-day)	--	--	--	--	[Delete: -- Add: 0.0126]
ADAF or AF _{lifetime}	--	--	--	--	[Delete:-- Add: 10 (ADAF<2) 3 (ADAF2 to <16) 1 (ADAF16+)]
Intake Rate (L/kg-day)	--	[Delete: * Add: #]	[Delete: * Add: #]	[Delete: * Add: #]	[Delete: -- Add: 0.155(<2) 0.040(2 to <16) 0.042 (16+)]
Endpoints	--	developmental, hepatic (liver) system, immune system [Delete: renal (kidney) system]	developmental, hepatic (liver) system, immune system [Delete: renal (kidney) system]	developmental, hepatic (liver) system, immune system [Delete: renal (kidney) system]	[Delete: -- Add: cancer]

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

[Delete:*] [Add: # 95th percentile water intake rates (Tables 3-1) [Delete: and] [Add: ,] 3-3-, [Add 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 [Delete: EPA] Exposure Factors Handbook, 2011.

[Add: Repealer. Minnesota Rules, part 4717.7500, subparts 5, 26a, and 31: and 4717.7860, subpart 8g, are repealed.]

Other resources:

Rules Amendments Contaminants:

<https://www.health.state.mn.us/communities/environment/risk/rules/water/chemicals.html>

Health Risk Limits rules, Minnesota Rules 4717.7860 (<https://www.revisor.mn.gov/rules/4717.7860>)

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