

1.1 **Department of Health**1.2 **Adopted 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: 187022-11-3

1.7 Year Proposed: 2010

1.8 Volatility: Nonvolatile

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

1.21 **Subp. 3b. Acetochlor OXA.**

1.22 CAS number: 184992-44-4

1.23 Year Proposed: 2010

1.24 Volatility: Nonvolatile

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

| | | | | | | |
|-----|------------------------------|---|-------------|-------------|-------------|---|
| 2.1 | RSC | – | 0.5 | 0.2 | 0.2 | – |
| 2.2 | SF (per | – | – | – | – | – |
| 2.3 | mg/kg-day) | | | | | |
| 2.4 | ADAF or | – | – | – | – | – |
| 2.5 | AF_{lifetime} | | | | | |
| 2.6 | Intake Rate | – | 0.289 | 0.077 | 0.043 | – |
| 2.7 | (L/kg-day) | | | | | |
| 2.8 | Endpoints | – | thyroid (E) | thyroid (E) | thyroid (E) | – |

2.9 Subp. 3c. **Acetone.**

2.10 CAS number: 67-64-1

2.11 Year Proposed: 2010

2.12 Volatility: Moderate

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

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

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

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

- 3.17 CAS number: 75-35-4
 3.18 Year Proposed: 2010
 3.19 Volatility: High

| | Acute | Short-term | Subchronic | Chronic | Cancer | |
|--------------|--------------------------------------|-------------------|-------------------|----------------|---------------|----|
| 3.20 3.21 | HRL (µg/L) | ND | ND | 200 | 200 | NA |
| 3.22 3.23 | RfD (mg/kg-day) | – | – | 0.090 | 0.046 | – |
| 3.24 | RSC | – | – | 0.2 | 0.2 | – |
| 3.25 3.26 | SF (per mg/kg-day) | – | – | – | – | – |
| 3.27 3.28 | ADAF or AF_{lifetime} | – | – | – | – | – |

| | | | | | | |
|-----|--------------------|---|---|-----------------|-----------------|---|
| 4.1 | Intake Rate | – | – | 0.077 | 0.043 | – |
| 4.2 | (L/kg-day) | | | | | |
| 4.3 | Endpoints | – | – | hepatic (liver) | hepatic (liver) | – |
| 4.4 | | | | system | system | |

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

| 4.10 | | Acute | Short-term | Subchronic | Chronic | Cancer |
|------|------------------------------|--------------|-------------------|-------------------|-----------------|---------------|
| 4.11 | HRL (µg/L) | ND | 50 | 50 (2) | 50 (2) | NA |
| 4.12 | RfD | – | 0.075 | (2) | (2) | – |
| 4.13 | (mg/kg-day) | | | | | |
| 4.14 | RSC | – | 0.2 | (2) | (2) | – |
| 4.15 | SF (per | – | – | – | – | – |
| 4.16 | mg/kg-day) | | | | | |
| 4.17 | ADAF or | – | – | – | – | – |
| 4.18 | AF_{lifetime} | | | | | |
| 4.19 | Intake Rate | – | 0.289 | (2) | (2) | – |
| 4.20 | (L/kg-day) | | | | | |
| 4.21 | Endpoints | – | hepatic (liver) | hepatic (liver) | hepatic (liver) | – |
| 4.22 | | | system, renal | system, renal | system, renal | |
| 4.23 | | | (kidney) | (kidney) | (kidney) | |
| 4.24 | | | system | system | system | |

4.25 Subp. 12b. **Ethylene glycol.**

4.26 CAS number: 107-21-1

4.27 Year Proposed: 2010

4.28 Volatility: Nonvolatile

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

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

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

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

6.1 CAS number: 171118-09-5

6.2 Year Proposed: 2010

6.3 Volatility: Nonvolatile

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

6.17 Subp. 12e. **Metolachlor OXA.**

6.18 CAS number: 152019-73-3

6.19 Year Proposed: 2010

6.20 Volatility: Nonvolatile

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

| | | | | | | |
|-----|--------------------|---|-------|------|-------|---|
| 7.1 | Intake Rate | – | 0.289 | (2) | 0.043 | – |
| 7.2 | (L/kg-day) | | | | | |
| 7.3 | Endpoints | – | none | none | none | – |

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 | | Acute | Short-term | Subchronic | Chronic | Cancer |
|------|------------------------------|--------------|-------------------|-------------------|-----------------|---------------|
| 7.10 | HRL (µg/L) | ND | ND | 9 | 7 | NA |
| 7.11 | RfD | – | – | 0.0042 | 0.0014 | – |
| 7.12 | (mg/kg-day) | | | | | |
| 7.13 | RSC | – | – | 0.5 | 0.2 | – |
| 7.14 | SF (per | – | – | – | – | – |
| 7.15 | mg/kg-day) | | | | | |
| 7.16 | ADAF or | – | – | – | – | – |
| 7.17 | AF_{lifetime} | | | | | |
| 7.18 | Intake Rate | – | – | 0.245 | 0.043 | – |
| 7.19 | (L/kg-day) | | | | | |
| 7.20 | Endpoints | – | – | hepatic (liver) | hepatic (liver) | – |
| 7.21 | | | | system, | system, | |
| 7.22 | | | | hematological | hematological | |
| 7.23 | | | | (blood) system, | (blood) system, | |
| 7.24 | | | | renal (kidney) | renal (kidney) | |
| 7.25 | | | | system | system | |

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

7.27 CAS number: 375-22-4

7.28 Year Proposed: 2010

7.29 Volatility: Nonvolatile

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

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

| | Acute | Short-term | Subchronic | Chronic | Cancer | |
|------|------------------------------|-------------------|-------------------|----------------|---------------|----|
| 8.20 | | | | | | |
| 8.21 | HRL (µg/L) | ND | 200 | 200 (2) | 200 (2) | NA |
| 8.22 | RfD | – | 0.22 | (2) | (2) | – |
| 8.23 | (mg/kg-day) | | | | | |
| 8.24 | RSC | – | 0.2 | (2) | (2) | – |
| 8.25 | SF (per | – | – | – | – | – |
| 8.26 | mg/kg-day) | | | | | |
| 8.27 | ADAF or | – | – | – | – | – |
| 8.28 | AF_{lifetime} | | | | | |

| | | | | | | |
|-----|--------------------|---|----------------------------------|----------------------------------|----------------------------------|---|
| 9.1 | Intake Rate | – | 0.289 | (2) | (2) | – |
| 9.2 | (L/kg-day) | | | | | |
| 9.3 | Endpoints | – | immune system, nervous system | immune system, nervous system | immune system, nervous system | – |
| 9.4 | | | | | | |

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

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

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,
9.28 40a, 41, 43, 46, 50, 52, 52a, 61, 65, 68, 70, 77a, 78b, 79, 80a, 81a, 85, 88b, and 89, are
9.29 repealed.