4717.8100 TABLE OF CHRONIC HRVs.

The heading for each item contains the chemical name and, in parenthesis, the CAS RN. Each item lists the chronic HRV, the equation used to develop the chronic HRV, and the variables necessary for the equation. The equations used to develop the chronic HRV are designated as follows:

"A" means calculating the $NOAEL_{[HEC]}$ or $LOAEL_{[HEC]}$ or $BMC_{[HEC]}$ under part 4717.8300, subpart 3, and applying the general equation under part 4717.8300, subpart 2;

"B" means calculating the $NOAEL_{[HEC]}$ or $LOAEL_{[HEC]}$ or $BMC_{[HEC]}$ under part 4717.8300, subpart 4, and applying the general equation under part 4717.8300, subpart 2;

"C" means calculating the $NOAEL_{[HEC]}$ or $LOAEL_{[HEC]}$ or $BMC_{[HEC]}$ under part 4717.8300, subpart 5, and applying the general equation under part 4717.8300, subpart 2;

"D" means calculating the $NOAEL_{[HEC]}$ or $LOAEL_{[HEC]}$ or $BMC_{[HEC]}$ under part 4717.8300, subpart 6, and applying the general equation under part 4717.8300, subpart 2; and

"E" means applying the equation under part 4717.8400, subpart 2.

The endpoint of concern is listed for use in determining a cancer index under part 4717.8550 or a hazard index under part 4717.8600. The unit risk for carcinogens is expressed as risk per ($\mu g/m^3$).

TABLE OF CHRONIC HRVs

A. Acetaldehyde (75-07-0)

Chronic HRV ($\mu g/m^3$)	**5**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.2E-6

B. Acetonitrile (75-05-8)

Chronic HRV ($\mu g/m^3$)	**60**
Endpoint of concern	Mortality
Equation	D
$NOAEL_{[HEC]}$ (mg/m^3)	6E1
Uncertainty factor	1,000

C. Acrylonitrile (107-13-1)

Chronic HRV ($\mu g/m^3$)	**0.1**
Endpoint of concern	Cancer
Equation	E
Unit risk	6.8E-5

D. Ammonia (7664-41-7)

Chronic HRV ($\mu g/m^3$)	**80**
Endpoint of concern	Upper and lower respiratory system
Equation	C
$NOAEL_{[HEC]}$ (mg/m^3)	2.3
Uncertainty factor	30

E. Antimony trioxide (1309-64-4)

Chronic HRV ($\mu g/m^3$)	**0.2**
Endpoint of concern	Lower respiratory system
Equation	A
$BMC_{[HEC]}$ (mg/m^3)	7.4E-2
Uncertainty factor	300

F. Arsenic (7440-38-2)

Chronic HRV ($\mu g/m^3$)	**0.002**
Endpoint of concern	Cancer
Equation	E
Unit risk	4.3E-3

G. Benzene (71-43-2)

Chronic HRV ($\mu g/m^3$)	**1.3 - 4.5**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.2E-6 to 7.8E-6

H. Benzidine (92-87-5)

Chronic HRV ($\mu g/m^3$)	**0.0002**
Endpoint of concern	Cancer
Equation	E
Unit risk	6.7E-2

I. Beryllium (7440-41-7)

Chronic HRV ($\mu g/m^3$)	**0.004**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.4E-3

J. Bis(chloromethyl)ether (542-88-1)

Chronic HRV ($\mu g/m^3$)	**0.0002**
Endpoint of concern	Cancer
Equation	E
Unit risk	6.2E-2

K. Bromomethane (74-83-9)

Chronic HRV ($\mu g/m^3$)	**5**
Endpoint of concern	Upper respiratory system
Equation	C
$LOAEL_{[HEC]}$ (mg/m^3)	4.8E-1
Uncertainty factor	100

L. 1,3-Butadiene (106-99-0)

Chronic HRV ($\mu g/m^3$)	**0.04**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.8E-4

M. Cadmium (7440-43-9)

Chronic HRV ($\mu g/m^3$)	**0.006**
Endpoint of concern	Cancer
Equation	E
Unit risk	1.8E-3

N. Carbon disulfide (75-15-0)

Chronic HRV ($\mu g/m^3$)	**700**
Endpoint of concern	Nervous system
Equation	D
$BMC_{[HEC]}$ (mg/m^3)	1.97E1
Uncertainty factor	30

O. 2-Chloroacetophenone (532-27-4)

Chronic HRV ($\mu g/m^3$)	**0.03**
Endpoint of concern	Upper and lower respiratory system
Equation	C
$LOAEL_{[HEC]}$ (mg/m^3)	3E-2
Uncertainty factor	1,000

P. Chromium VI (18540-29-9)

Chronic HRV ($\mu g/m^3$)	**0.0008**
Endpoint of concern	Cancer
Equation	E
Unit risk	1.2E-2

Q. Coke oven emissions (8007-45-2)

Chronic HRV ($\mu g/m^3$)	**0.02**
Endpoint of concern	Cancer
Equation	E
Unit risk	6.2E-4

R. 1,2-Dibromoethane (106-93-4)

Chronic HRV ($\mu g/m^3$)	**0.05**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.2E-4

S. Dichloromethane (75-09-2)

Chronic HRV ($\mu g/m^3$)	**20**
Endpoint of concern	Cancer
Equation	E
Unit risk	4.7E-7

T. 1,3-Dichloropropene (542-75-6)

Chronic HRV ($\mu g/m^3$)	**20**
Endpoint of concern	Upper respiratory system
$BMC_{[HEC]}$ (mg/m^3)	7.2E-1
Equation	C
Uncertainty factor	30

U. Dichlorvos (62-73-7)

Chronic HRV ($\mu g/m^3$)	**0.5**
Endpoint of concern	Nervous system
Equation	D
$NOAEL_{[HEC]}$ (mg/m^3)	5E-2
Uncertainty factor	100

V. Diesel particulates (*)

Chronic HRV ($\mu g/m^3$)	**5**
Endpoint of concern	Lower respiratory system
Equation	A
$NOAEL_{[HEC]}$ (mg/m^3)	1.55E-1
Uncertainty factor	30

W. N,N-dimethylformamide (68-12-2)

Chronic HRV ($\mu g/m^3$)	**30**
Endpoint of concern	Gastrointestinal system and hepatic system
Equation	D
$LOAEL_{[HEC]}$ (mg/m^3)	7.9
Uncertainty factor	300

X. Epichlorohydrin (106-89-8)

Chronic HRV ($\mu g/m^3$)	**8**
Endpoint of concern	Cancer
Equation	E
Unit risk	1.2E-6

Y. 1,2-Epoxybutane (106-88-7)

Chronic HRV ($\mu g/m^3$)	**20**
Endpoint of concern	Upper respiratory system
Equation	C
$LOAEL_{[HEC]}$ (mg/m^3)	4.8
Uncertainty factor	300

Z. Ethylene glycol monobutyl ether (111-76-2)

Chronic HRV ($\mu g/m^3$)	**13,000**
Endpoint of concern	Hematologic system
Equation	D
$BMC_{[HEC]}$ (mg/m^3)	3.8E2
Uncertainty factor	30

AA. Formaldehyde (50-00-0)

Chronic HRV ($\mu g/m^3$)	**0.8****
Endpoint of concern	Cancer
Equation	E
Unit risk	1.3E-5

BB. 1,6-Hexamethylene diisocyanate (822-06-0)

Chronic HRV ($\mu g/m^3$)	**0.01****
Endpoint of concern	Upper and lower respiratory system
Equation	C
$NOAEL_{[HEC]}$ (mg/m^3)	1E-3
Uncertainty factor	100

CC. n-Hexane (110-54-3)

Chronic HRV ($\mu g/m^3$)	**2,000**
Endpoint of concern	Nervous system and upper respiratory system
Equation	D
$LOAEL_{[HEC]}$ (mg/m^3)	7.3E1
Uncertainty factor	30

DD. Hydrazine/Hydrazine sulfate (302-01-2)

Chronic HRV ($\mu g/m^3$)	**0.002**
Endpoint of concern	Cancer
Equation	E
Unit risk	4.9E-3

EE. Hydrogen chloride (7647-01-0)

Chronic HRV ($\mu g/m^3$)	**20**
Endpoint of concern	Upper respiratory system
Equation	C
$LOAEL_{[HEC]}$ (mg/m^3)	6.1
Uncertainty factor	300

FF. Hydrogen cyanide (74-90-8)

Chronic HRV ($\mu g/m^3$)	**3**
Endpoint of concern	Endocrine system and nervous system
Equation	D

$LOAEL_{[HEC]}$ (mg/m^3)	2.5
Uncertainty factor	1,000

GG. Manganese (7439-96-5)

Chronic HRV ($\mu g/m^3$)	**0.2**
Endpoint of concern	Nervous system
Equation	B
$BMC_{[HEC]}$ (mg/m^3)	1.9E-2
Uncertainty factor	100

HH. Methyl methacrylate (80-62-6)

Chronic HRV ($\mu g/m^3$)	**700****
Endpoint of concern	Upper and lower respiratory system
Equation	C
$BMC_{[HEC]}$ (mg/m^3)	7.2
Uncertainty factor	10

II. Methylene diphenyl diisocyanate (MDI) and polymeric MDI (101-68-8 and 9016-87-9)

Chronic HRV ($\mu g/m^3$)	**0.6****
Endpoint of concern	Upper and lower respiratory system
Equation	A
$BMC_{[HEC]}$ (mg/m^3)	6E-2
Uncertainty factor	100

JJ. Nickel refinery dust (*)

Chronic HRV ($\mu g/m^3$)	**0.04**
Endpoint of concern	Cancer
Equation	E
Unit risk	2.4E-4

KK. Nickel subsulfide (12035-72-2)

Chronic HRV ($\mu g/m^3$)	**0.02**
Endpoint of concern	Cancer
Equation	E
Unit risk	4.8E-4

LL. 2-Nitropropane (79-46-9)

Chronic HRV ($\mu g/m^3$)	**20**
Endpoint of concern	Hepatic system
Equation	D
$LOAEL_{[HEC]}$ (mg/m^3)	1.6E1
Uncertainty factor	1,000

MM. Propylene oxide (75-56-9)

Chronic HRV ($\mu g/m^3$)	**3**
Endpoint of concern	Cancer
Equation	E
Unit risk	3.7E-6

NN. Styrene (100-42-5)

Chronic HRV ($\mu g/m^3$)	**1000**
Endpoint of concern	Nervous system
Equation	D
$NOAEL_{[HEC]}$ (mg/m^3)	3.4E1
Uncertainty factor	30

OO. Toluene (108-88-3)

Chronic HRV ($\mu g/m^3$)	**400**
Endpoint of concern	Nervous system and upper respiratory system
Equation	D
$LOAEL_{[HEC]}$ (mg/m^3)	1.19E2
Uncertainty factor	300

PP. 2,4-/2,6-Toluene diisocyanate (26471-62-5)

Chronic HRV ($\mu g/m^3$)	**0.08****
Endpoint of concern	Lower respiratory system
Equation	D
$NOAEL_{[HEC]}$ (mg/m^3)	2.3E-3
Uncertainty factor	30

QQ. Vinyl acetate (108-05-4)

Chronic HRV ($\mu g/m^3$)	**200**
Endpoint of concern	Upper respiratory system
Equation	C
$NOAEL_{[HEC]}$ (mg/m^3)	5
Uncertainty factor	30

RR. Vinyl chloride (75-01-4)

Chronic HRV ($\mu g/m^3$)	**1**
Endpoint of concern	Cancer
Equation	E
Unit risk	8.8E-6

* This HRV is for a chemical mixture which, therefore, does not have a chemical-specific number assigned by the Chemical Abstracts Service.

** This HRV may not provide protection for individuals who have been previously sensitized to this chemical.

Statutory Authority: *MS s 144.12*

History: *26 SR 1229; 26 SR 1395*

Published Electronically: *January 5, 2016*