Rule 57 Aquatic Values Data Sheet

8/25/2010

Chemical or product name: 4-Chlorophenol
Manufacturer (WTAs): -----
C.A.S #: 106-48-9

Developed by: Christopher Hull *FAV*: 530 ug/l* *(Tier: II)*
Approved by: D.Bush *AMV*: 270 ug/l* *(Tier: II)*
Approval date: 10/4/2010 *FCV*: 30 ug/l* *(Tier: II)*
CAS: 12/17/09; AQUIRE: 12/14/09; QSAR: 6/22/ *Acute CF: ----* *Chronic CF: ----*
Clearinghouse search date: -----

ACUTE DATA

Species	Endpoint (EC or LC50)	Duration (hours)	Test Type (FT,M, etc.)	Hardness mg/L	Test Chemical	LC50/EC50 ug/L	SMAV ug/L	GMAV ug/L	Rank	Reference
Water Flea	LC50	48	S,U	173	-----	4,100 [1]	4,252	4,252	1	1
(Daphnia magna)	LC50	48	S,U	150	-----	4,410 [1]				2
Fathead Minnow	EC50	96	FT,M	44.8	-----	5,710	5,710	5,710	2	3
(Pimephales promelas)	LC50	96	FT,M	45	-----	6,110 [2]				3
Pink Hydra *(Hydra vulgaris)*	LC50	96	S,M	-----	-----	32,000	32,000	37,947	3	4
Green Hydra *(H. viridissima)*	LC50	96	S,M	-----	-----	45,000	45,000			4

CHRONIC DATA

Species	Test type (ELS, etc.)	Duration (days)	Study Conditions (FT,M etc.)	Hardness mg/L	Test Chemical	MATC ug/L	SMCV ug/L	GMCV ug/L	Rank	Reference

- NO SUITABLE DATA WERE FOUND.

*Value rounded to 2 significant figures.

[1] Lyman et al. (1982; p. 15-15) would conclude that a chemical with these properties will volatilize at significant rates in open water (QSAR, 6/22/10) Therefore, data from tests with measured concentrations should be preferred.

[2] This value was not used to calculate the SMAV, because an EC50 value from the same test is preferred and available.

Min. Data Req. met	Acute Factor
2	13
3	8
4	7
5	6.1
6	5.2
7	4.3

RULE 57 AQUATIC VALUES WORK SHEET-ACUTE

Chemical Name: **4-Chlorophenol**
CAS #: **106-48-9**
Developed by: **Christopher Hull**
Date: **8/25/10**

AQUATIC MAXIMUM VALUE CALCULATIONS

A. Minimum 8-species requirement for Tier I is **not** met (Tier II): **Yes**.

1. Minimum requirements met = 3 (iii, iv, vii).

2. Minimum requirements missing for Tier I = 5 (i, ii, v, vi, viii).

3. Acute Factor = 8.

4. Toxicity is **not** dependent upon a water quality characteristic: **Yes**.

   a. FAV calculation: Tier II FAV = Lowest GMAV / Acute Factor = 4,252 ug/l / 8 = **531.5 ug/l**.

5. Toxicity **is** dependent upon a water quality characteristic: **No**.

   a. Slope = _____ (Table_____).

   b. FAV equation: Tier II FAV = ______ = ______ = ______.

6. Go to C.

B. Minimum 8-species requirement **is** met (Tier I): **No**.

1. Toxicity is **not** dependent upon a water quality characteristic: ______.

   a. Tier I FAV calculation: ______ (_____).

2. Toxicity **is** dependent upon a water quality characteristic: ______.

   a. Slope = _____ (Table_____).

   b. Ranked genus mean acute intercepts: Table _____.

   c. Final acute intercept = _____ (_____).

   ln of final acute intercept = _____.

   d. FAV equation: Tier I FAV = ______ = ______ = ______.

C. Aquatic Maximum Value (AMV) calculation: Tier II AMV = Tier II FAV / 2 = 531.5 ug/l / 2 = **265.75 ug/l**.

RULE 57 AQUATIC VALUES WORK SHEET-CHRONIC

Chemical Name: **4-Chlorophenol**
CAS #: **106-48-9**
Developed by: **Christopher Hull**
Date: **8/25/10**

FINAL CHRONIC VALUE CALCULATIONS

A. Minimum 8-species requirement for GMCV-based Tier I is **not** met: **Yes**.

1. Minimum requirements met = 0.

2. Minimum requirements missing = 8.

B. Minimum 8-species requirement for GMCV-based Tier I **is** met: **No**.

1. Toxicity is **not** dependent upon a water quality characteristic: ______.

   a. Tier I FCV = ______ (Fig. _____).

2. Toxicity is dependent upon a water quality characteristic: ______.

   a. Slope = _____ (Table_____).

   b. Ranked Genus Mean Chronic Intercepts: Table _____.

   c. Final Chronic Intercept = _____ (Fig. _____).

   d. ln of Final Chronic Intercept = _____.

   e. FCV equation = Tier I FCV = ______ = ______ = ______.

C. Acute-to-Chronic-Ratio method: **Yes**.

1. Acute-to-Chronic Ratio:

   a. Number of ACRs meeting minimum data requirements = 0 (Table-----).

   b. Tier II Acute-to-Chronic Ratio = Default Value = Xg(18, 18, 18) = **18**.

2. Toxicity is **not** dependent upon a water quality characteristic: **Yes**.

   Tier II FCV = Tier II FAV / Tier II ACR = 531.5 ug/l / 18 = **29.527778 ug/l**.

3. Toxicity is dependent upon a water quality characteristic: **No**.

   a. Slope = _____ (Table_____).

   b. Aquatic Chronic Intercept = _____ (Table _____).

   c. ln of Aquatic Chronic Intercept = _____.

   d. FCV equation = Tier _____ FCV = ______ = ______ = ______.

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4-CHLOROPHENOL REFERENCES, 8/10

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*For abbreviations used, see appendix, attached.

APPENDIX: REFERENCE ABBREVIATIONS USED, 8/10

AMD = ambient monitoring data.
BCF = bioconcentration factor.
D = data (as a suffix to other abbreviations listed here).
DEP = depuration data.
DO = data only (as a suffix to other abbreviations listed here).
EF = environmental fate.
FLO = foreign language, only.
GWD = groundwater data.
IITM/C = insufficient information on test methods / conditions.
ISD = *in situ* data.
LD = leachate data.
LSER = Linear Solvation Energy Relationship.
MCD = microcosm data.
MIX = mixture (not chemical-specific) test data.
MED = model ecosystem data.
MET = metabolism
MOD = model (theoretical) data / analysis.
NA = not available at this time.
ND = no data (on this chemical).
NIL = not in (MDEQ) Library.
NR = not reviewed.
NUE = no useable endpoint.
O = only (as a suffix to other abbreviations listed here).
PD = phytotoxicity data.
PHYS = physiological data.
QSAR = Quantitative Structure-Activity Relationship.
RWD = receiving water data.
SD = secondary data.
SED = sediment data or testing.
SW = saltwater.
TATO = test animals too old.
TDI = test duration inappropriate.
TM/CU = test methods / conditions unacceptable.
TONNA = test organisms not North American.
TONS = test organisms not suitable.
TTD = time-toxicity data.
UD or UP = uptake data.
WET = whole-effluent testing.