United States
Environmental Protection Agency

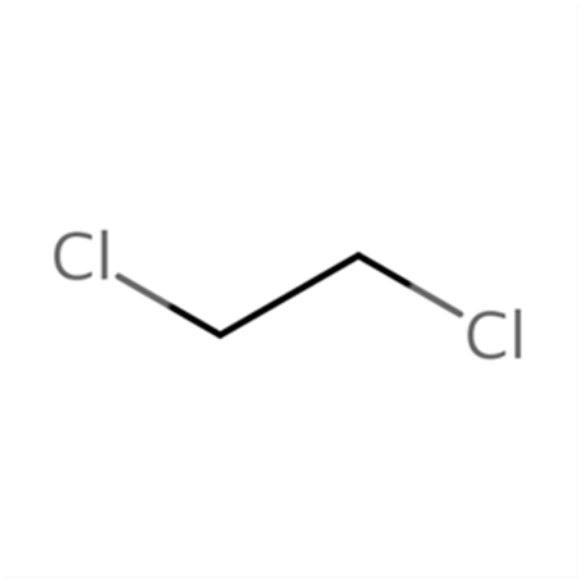
April 2026
Office of Chemical Safety and
Pollution Prevention

Risk Evaluation for 1,2-Dichloroethane

Supplemental Information File:

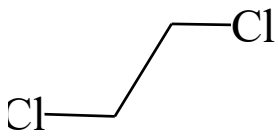
Supplemental Information on EPI Suite Modeling Results in the Fate Assessment

CASRN 107-06-2



April 2026

EPI Suite Results For CAS 107-06-2




```
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
------------------------------ EPI SUMMARY (v4.11) --------------------------
Physical Property Inputs:
Log Kow (octanol-water):   1.48
Boiling Point (deg C)  :   83.43
Melting Point (deg C)  :   -35.61
Vapor Pressure (mm Hg) :   78.9
Water Solubility (mg/L):   8600
Henry LC (atm-m3/mole) :   0.00154

KOWWIN Program (v1.68) Results:
===============================

Log Kow(version 1.69 estimate): 1.83

Experimental Database Structure Match:
Name     :  1,2-DICHLOROETHANE
CAS Num  :  000107-06-2
Exp Log P:  1.48
Exp Ref  :  HANSCH,C ET AL. (1995)

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
-------+-----+-----------------------------------------+---------+--------
TYPE   | NUM |        LOGKOW FRAGMENT DESCRIPTION      |  COEFF  |  VALUE
-------+-----+-----------------------------------------+---------+--------
```

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Frag  |  2  |  -CH2-   [aliphatic carbon]                | 0.4911  |  0.9822
Frag  |  2  |  -CL     [chlorine, aliphatic attach]       | 0.3102  |  0.6204
Const |     |  Equation Constant                          |         |  0.2290
-------+-----+---------------------------------------------+---------+--------
Log Kow   =   1.8316


MPBPVP (v1.43) Program Results:
================================
Experimental Database Structure Match:
Name     :  1,2-DICHLOROETHANE
CAS Num  :  000107-06-2
Exp MP (deg C):  -35.5
Exp BP (deg C):  83.5
Exp VP (mm Hg):  7.89E+01
(Pa   ):  1.05E+004
Exp VP (deg C):  25
Exp VP ref    :  DAUBERT,TE & DANNER,RP (1985)

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
----------------------- SUMMARY MPBPWIN v1.44 --------------------


Boiling Point:  104.72 deg C (Adapted Stein and Brown Method)

Melting Point: -101.02 deg C (Adapted Joback Method)
Melting Point:  -52.52 deg C (Gold and Ogle Method)
Mean Melt Pt :  -76.77 deg C (Joback; Gold,Ogle Methods)
Selected MP:  -76.77 deg C (Mean Value)

Vapor Pressure Estimations (25 deg C):
(Using BP: 83.43 deg C (user entered))
(MP not used for liquids)
VP:  78.2 mm Hg (Antoine Method)
:  1.04E+004 Pa  (Antoine Method)
VP:  72.9 mm Hg (Modified Grain Method)
:  9.72E+003 Pa  (Modified Grain Method)
VP:  88.2 mm Hg (Mackay Method)
:  1.18E+004 Pa  (Mackay Method)
Selected VP:  75.6 mm Hg (Mean of Antoine & Grain methods)
:  1.01E+004 Pa  (Mean of Antoine & Grain methods)



-------+-----+--------------------+----------+---------
TYPE  | NUM |  BOIL DESCRIPTION  |  COEFF   |  VALUE
-------+-----+--------------------+----------+---------
Group |  2  |  -CH2-             |   24.22  |   48.44
Group |  2  |  -Cl (primary)     |   62.63  |  125.26
*   |     |  Equation Constant |          |  198.18
=============+====================+==========+=========
RESULT-uncorr|  BOILING POINT in deg Kelvin  |  371.88
RESULT- corr |  BOILING POINT in deg Kelvin  |  377.88
|  BOILING POINT in deg C       |  104.72
-----------------------------------------------------
```

```
-------+-----+--------------------+----------+---------
TYPE  | NUM |  MELT DESCRIPTION  |  COEFF   |  VALUE
-------+-----+--------------------+----------+---------
Group |  2  |  -CH2-             |   11.27  |   22.54
Group |  2  |  -Cl (primary)     |   13.55  |   27.10
*   |     |  Equation Constant |          |  122.50
============+====================+==========+=========
RESULT    |  MELTING POINT in deg Kelvin  |  172.14
|  MELTING POINT in deg C       | -101.02
-----------------------------------------------------



Water Sol from Kow (WSKOW v1.42) Results:
=========================================

Water Sol: 9056 mg/L

Experimental Water Solubility Database Match:
Name     :  1,2-DICHLOROETHANE
CAS Num  :  000107-06-2
Exp WSol :  8600 mg/L (25 deg C)
Exp Ref  :  HORVATH,AL ET AL. (1999)

Experimental Water Solubility Database Match:
Name     :  DICHLOROETHANES
CAS Num  :  001300-21-6
Exp WSol :  5100 mg/L ( deg C)
Exp Ref  :  KUHN,W & SANDER,R (1981)

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
---------------------------------- WSKOW v1.43 Results ------------------------
Log Kow  (estimated)  :  1.83
Log Kow (experimental):  1.48
Cas No: 000107-06-2
Name  : 1,2-DICHLOROETHANE
Refer : HANSCH,C ET AL. (1995)
Log Kow used by Water solubility estimates:  1.48 (user entered)

Equation Used to Make Water Sol estimate:
Log S (mol/L) = 0.693-0.96 log Kow-0.0092(Tm-25)-0.00314 MW + Correction

Melting Pt (Tm) = -35.61 deg C (Use Tm = 25 for all liquids)

Correction(s):         Value
--------------------   -----
No Applicable Correction Factors

Log Water Solubility  (in moles/L) :  -1.039
Water Solubility at 25 deg C (mg/L):  9056



WATERNT Program (v1.01) Results:
================================

Water Sol (v1.01 est): 3946.8 mg/L
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Experimental Water Solubility Database Match:
Name     :  1,2-DICHLOROETHANE
CAS Num  :  000107-06-2
Exp WSol :  8600 mg/L (25 deg C)
Exp Ref  :  HORVATH,AL ET AL. (1999)

Experimental Water Solubility Database Match:
Name     :  DICHLOROETHANES
CAS Num  :  001300-21-6
Exp WSol :  5100 mg/L ( deg C)
Exp Ref  :  KUHN,W & SANDER,R (1981)

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
-------+-----+-----------------------------------------+----------+---------
TYPE   | NUM |    WATER SOLUBILITY FRAGMENT DESCRIPTION   |  COEFF   |  VALUE
-------+-----+-----------------------------------------+----------+---------
Frag   |  2  |  -CH2-   [aliphatic carbon]                |-0.5370   | -1.0740
Frag   |  2  |  -CL     [chlorine, aliphatic attach]      |-0.2872   | -0.5744
Const  |     |  Equation Constant                         |          |  0.2492
-------+-----+-----------------------------------------+----------+---------
Log Water Sol (moles/L) at 25 dec C  =   -1.3992
Water Solubility (mg/L) at 25 dec C  =   3946.8



ECOSAR Program (v1.11) Results:
==============================
ECOSAR Version 1.11 Results Page

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
CAS Num:
ChemID1:
MOL FOR: C2 H4 CL2
MOL WT : 98.96
Log Kow: 1.832      (EPISuite Kowwin v1.68 Estimate)
Log Kow:            (User Entered)
Log Kow: 1.48       (PhysProp DB exp value - for comparison only)
Melt Pt: -35.61     (deg C, User Entered for Wat Sol estimate)
Melt Pt: -35.50     (deg C, PhysProp DB exp value for Wat Sol est)
Wat Sol: 9056       (mg/L, EPISuite WSKowwin v1.43 Estimate)
Wat Sol: 8600       (mg/L, User Entered)
Wat Sol: 5100       (mg/L, PhysProp DB exp value)


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Values used to Generate ECOSAR Profile
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Log Kow: 1.832      (EPISuite Kowwin v1.68 Estimate)
Wat Sol: 8600       (mg/L, User Entered)



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ECOSAR v1.11 Class-specific Estimations
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Neutral Organics
Predicted

ECOSAR Class	Organism	Duration	End Pt	mg/L (ppm)
Neutral Organics	: Fish	96-hr	LC50	115.160
Neutral Organics	: Daphnid	48-hr	LC50	64.380
Neutral Organics	: Green Algae	96-hr	EC50	44.970
Neutral Organics	: Fish		ChV	11.052
Neutral Organics	: Daphnid		ChV	6.012
Neutral Organics	: Green Algae		ChV	11.376
Neutral Organics	: Fish (SW)	96-hr	LC50	144.831
Neutral Organics	: Mysid	96-hr	LC50	120.644
Neutral Organics	: Fish (SW)		ChV	14.184
Neutral Organics	: Mysid (SW)		ChV	10.962
Neutral Organics	: Earthworm	14-day	LC50	179.112

Note: * = asterisk designates: Chemical may not be soluble enough to measure this predicted effect. If the effect level exceeds the water solubility by 10X, typically no effects at saturation (NES) are reported.

Class Specific LogKow Cut-Offs

If the log Kow of the chemical is greater than the endpoint specific cut-offs presented below, then no effects at saturation are expected for those endpoints.

Neutral Organics:

Maximum LogKow: 5.0 (Fish 96-hr LC50; Daphnid LC50, Mysid LC50)
Maximum LogKow: 6.0 (Earthworm LC50)
Maximum LogKow: 6.4 (Green Algae EC50)
Maximum LogKow: 8.0 (ChV)

HENRYWIN (v3.20) Program Results:
==========

Bond Est : 1.21E-002 atm-m3/mole (1.23E+003 Pa-m3/mole)
Group Est: 1.94E-004 atm-m3/mole (1.97E+001 Pa-m3/mole)

SMILES : CLCCCL
CHEM : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
---------- HENRYWIN v3.21 Results ----------

Experimental Database Structure Match:
Name : 1,2-DICHLOROETHANE
CAS Num : 000107-06-2
Exp HLC : 1.18E-03 atm-m3/mole (120 Pa-m3/mole)
Temper : 25 deg C
Exp Ref : LEIGHTON,DTJR & CALO,JM (1981)

CLASS	BOND CONTRIBUTION DESCRIPTION	COMMENT	VALUE

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----------+-----------------------------------------------+---------+----------
HYDROGEN |   4  Hydrogen to Carbon (aliphatic) Bonds     |         | -0.4787
FRAGMENT |   1  C-C                                      |         |  0.1163
FRAGMENT |   2  C-CL                                     |         |  0.6669
----------+-----------------------------------------------+---------+----------
RESULT   |    BOND ESTIMATION METHOD for LWAPC VALUE     |  TOTAL  |  0.305
----------+-----------------------------------------------+---------+----------
HENRYs LAW CONSTANT at 25 deg C = 1.21E-002 atm-m3/mole
= 4.96E-001 unitless
= 1.23E+003 Pa-m3/mole

--------+-----------------------------------------------+-----------+--------
|        GROUP CONTRIBUTION DESCRIPTION         |   COMMENT  |  VALUE
--------+-----------------------------------------------+-----------+--------
|           2  CH2 (C)(CL)                      |            |  2.10
--------+-----------------------------------------------+-----------+--------
RESULT |  GROUP ESTIMATION METHOD for LOG GAMMA VALUE  |    TOTAL   |  2.10
--------+-----------------------------------------------+-----------+--------
HENRYs LAW CONSTANT at 25 deg C = 1.94E-004 atm-m3/mole
= 7.94E-003 unitless
= 1.97E+001 Pa-m3/mole


For Henry LC Comparison Purposes:
Exper Database: 1.18E-03  atm-m3/mole  (1.20E+002 Pa-m3/mole)
User-Entered Henry LC:  1.540E-003 atm-m3/mole  (1.560E+002 Pa-m3/mole)
Henrys LC [via VP/WSol estimate using User-Entered or Estimated values]:
HLC:  1.195E-003 atm-m3/mole  (1.210E+002 Pa-m3/mole)
VP:   78.9 mm Hg (source: User-Entered)
WS:   8.6E+003 mg/L (source: User-Entered)



Log Octanol-Air (KOAWIN v1.10) Results:
=======================================

Log Koa: 2.681

SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
--------------------------- KOAWIN v1.10 Results -------------------------

Experimental Database Structure Match:
Name      :  1,2-Dichloroethane
CAS Num   :  000107-06-2
Exp LogKoa:  2.78
Exp Ref   :  Abraham,MH et al. (2001)

Log Koa (octanol/air) estimate:  2.681
Koa (octanol/air) estimate:  479.7
Using:
Log Kow:  1.48  (user entered)
HenryLC:  0.00154  atm-m3/mole (user entered)
Log Kaw:  -1.201  (air/water part.coef.)

LogKow  : 1.48 (exp database)
LogKow  : 1.83 (KowWin estimate)
Henry LC: 0.00118 atm-m3/mole (exp database)
```

Henry LC: 0.0121 atm-m3/mole (HenryWin bond estimate)

Log Koa (octanol/air) estimate: 2.136 (from KowWin/HenryWin)

BIOWIN (v4.10) Program Results:
==============================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
--------------------------- BIOWIN v4.10 Results ---------------------------

Biowin1 (Linear Model Prediction)   : Does Not Biodegrade Fast
Biowin2 (Non-Linear Model Prediction): Does Not Biodegrade Fast
Biowin3 (Ultimate Biodegradation Timeframe): Weeks-Months
Biowin4 (Primary Biodegradation Timeframe): Days-Weeks
Biowin5 (MITI Linear Model Prediction)   : Does Not Biodegrade Fast
Biowin6 (MITI Non-Linear Model Prediction): Does Not Biodegrade Fast
Biowin7 (Anaerobic Model Prediction): Biodegrades Fast
Ready Biodegradability Prediction: NO

TYPE	NUM	Biowin1 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-0.1114	-0.2228
MolWt	*	Molecular Weight Parameter		-0.0471
Const	*	Equation Constant		0.7475
RESULT		Biowin1 (Linear Biodeg Probability)		0.4777

TYPE	NUM	Biowin2 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-1.8528	-3.7056
MolWt	*	Molecular Weight Parameter		-1.4052
RESULT		Biowin2 (Non-Linear Biodeg Probability)		0.1089

A Probability Greater Than or Equal to 0.5 indicates --> Biodegrades Fast
A Probability Less Than 0.5 indicates --> Does NOT Biodegrade Fast

TYPE	NUM	Biowin3 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-0.1732	-0.3464
MolWt	*	Molecular Weight Parameter		-0.2187
Const	*	Equation Constant		3.1992
RESULT		Biowin3 (Survey Model - Ultimate Biodeg)		2.6341

TYPE	NUM	Biowin4 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-0.1006	-0.2012
MolWt	*	Molecular Weight Parameter		-0.1428

Const	*	Equation Constant		3.8477
RESULT		Biowin4 (Survey Model - Primary Biodeg)		3.5037

Result Classification: 5.00 -> hours 4.00 -> days 3.00 -> weeks
(Primary & Ultimate) 2.00 -> months 1.00 -> longer

TYPE	NUM	Biowin5 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	0.0174	0.0349
Frag	2	-CH2- [linear]	0.0255	0.0511
MolWt	*	Molecular Weight Parameter		-0.1561
Const	*	Equation Constant		0.5544
RESULT		Biowin5 (MITI Linear Biodeg Probability)		0.4842

TYPE	NUM	Biowin6 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-0.6392	-1.2784
Frag	2	-CH2- [linear]	0.2345	0.4690
MolWt	*	Molecular Weight Parameter		-1.7120
RESULT		Biowin6 (MITI Non-Linear Biodeg Probability)		0.2975

A Probability Greater Than or Equal to 0.5 indicates --> Readily Degradable
A Probability Less Than 0.5 indicates --> NOT Readily Degradable

TYPE	NUM	Biowin7 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	-0.0147	-0.0293
Frag	2	-CH2- [linear]	0.0260	0.0520
Const	*	Equation Constant		0.8361
RESULT		Biowin7 (Anaerobic Linear Biodeg Prob)		0.8587

A Probability Greater Than or Equal to 0.5 indicates --> Biodegrades Fast
A Probability Less Than 0.5 indicates --> Does NOT Biodegrade Fast

Ready Biodegradability Prediction: (YES or NO)

Criteria for the YES or NO prediction: If the Biowin3 (ultimate survey model) result is "weeks" or faster (i.e. "days", "days to weeks", or "weeks" AND the Biowin5 (MITI linear model) probability is >= 0.5, then the prediction is YES (readily biodegradable). If this condition is not satisfied, the prediction is NO (not readily biodegradable). This method is based on application of Bayesian analysis to ready biodegradation data (see Help). Biowin5 and 6 also predict ready biodegradability, but for degradation in the OECD301C test only; using data from the Chemicals Evaluation and Research Institute Japan (CERIJ) database.

```
BioHCwin (v1.01) Program Results:
================================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
-------------------------- BioHCwin v1.01 Results --------------------------

NO Estimate Possible ... Structure NOT a Hydrocarbon
(Contains atoms other than C, H or S (-S-))



AEROWIN Program (v1.00) Results:
================================
Sorption to aerosols (25 Dec C)[AEROWIN v1.00]:
Vapor pressure (liquid/subcooled):  1.05E+004 Pa (78.9 mm Hg)
Log Koa (Exp database): 2.780
Kp (particle/gas partition coef. (m3/ug)):
Mackay model           :  2.85E-010
Octanol/air (Koa) model:  1.48E-010
Fraction sorbed to airborne particulates (phi):
Junge-Pankow model     :  1.03E-008
Mackay model           :  2.28E-008
Octanol/air (Koa) model:  1.18E-008


AOP Program (v1.92) Results:
============================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
------------------- SUMMARY (AOP v1.92): HYDROXYL RADICALS (25 deg C) --------
Hydrogen Abstraction       =   0.2555 E-12 cm3/molecule-sec
Reaction with N, S and -OH =   0.0000 E-12 cm3/molecule-sec
Addition to Triple Bonds   =   0.0000 E-12 cm3/molecule-sec
Addition to Olefinic Bonds =   0.0000 E-12 cm3/molecule-sec
Addition to Aromatic Rings =   0.0000 E-12 cm3/molecule-sec
Addition to Fused Rings    =   0.0000 E-12 cm3/molecule-sec

OVERALL OH Rate Constant =   0.2555 E-12 cm3/molecule-sec
HALF-LIFE =    41.856 Days (12-hr day; 1.5E6 OH/cm3)
------------------- SUMMARY (AOP v1.91): OZONE REACTION (25 deg C) -----------

******  NO OZONE REACTION ESTIMATION ******
(ONLY Olefins and Acetylenes are Estimated)

Experimental Database Structure Match:
Chem Name :  1,2-DICHLOROETHANE
CAS Number:  000107-06-2
Exper OH rate constant   :  0.248  E-12  cm3/molecule-sec
Exper OH Reference:  KWOK,ESC & ATKINSON,R (1994)
Exper Ozone rate constant:  ---  cm3/molecule-sec
Exper NO3 rate constant  :  ---  cm3/molecule-sec
Fraction sorbed to airborne particulates (phi):
1.66E-008 (Junge-Pankow, Mackay avg)
1.18E-008 (Koa method)
Note: the sorbed fraction may be resistant to atmospheric oxidation
```

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KOCWIN Program (v2.00) Results:
==============================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96

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Experimental Database Structure Match:
Name     :  1,2-Dichloroethane
CAS Num  :  000107-06-2
Exp LogKoc:  1.52
Exp Ref  :  SRC (1991); Meylan et al (1992)

--------------------------  KOCWIN v2.01 Results  --------------------------

Koc Estimate from MCI:
----------------------
First Order Molecular Connectivity Index  ..........  :  1.914
Non-Corrected Log Koc (0.5213 MCI + 0.60)  ..........  :  1.5977
Fragment Correction(s) -->  NONE                       :   ---
Corrected Log Koc  ................................... :  1.5977

Estimated Koc:  39.6  L/kg   <===========

Koc Estimate from Log Kow:
--------------------------
Log Kow  (User entered   )  ......................... :  1.48
Non-Corrected Log Koc (0.8679 logKow - 0.0004)  ..... :  1.2841
Fragment Correction(s) -->  NONE                       :   ---
Corrected Log Koc  ................................... :  1.2841

Estimated Koc:  19.23  L/kg   <===========




HYDROWIN Program (v2.00) Results:
=================================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
--------------------------- HYDROWIN v2.00 Results ---------------------------


R2
|               X: -CL  (Leaving halogen in R1)
ALKYL HALIDE:         R1-C-H            R1: -CH2-CL
|              R2: -CL
R3             R3: -H
Kb hydrolysis at atom #  3:  4.686E-007  L/mol-sec

Total Kb for pH > 8 at 25 deg C :  4.686E-007  L/mol-sec
Kb Half-Life at pH 8: 4.687E+004  years
Kb Half-Life at pH 7: 4.687E+005  years
```

The rate constant estimated for the ALKYL HALIDE DOES NOT
include the neutral hydrolysis rate constant!!
For some alkyl halides, the neutral rate constant is the
dominant hydrolysis rate at environmental pHs!
If the neutral rate constant is important, the HYDRO
estimated rate will under-estimate the actual rate!

BCFBAF Program (v3.01) Results:
==============================
SMILES : CLCCCL
CHEM   : Ethane, 1,2-dichloro-
MOL FOR: C2 H4 CL2
MOL WT : 98.96
--------------------------------- BCFBAF v3.01 ---------------------------------
Summary Results:
Log BCF (regression-based estimate): 0.64 (BCF = 4.4 L/kg wet-wt)
Biotransformation Half-Life (days) : 0.272 (normalized to 10 g fish)
Log BAF (Arnot-Gobas upper trophic): 0.58 (BAF = 3.78 L/kg wet-wt)

Log Kow (experimental): 1.48
Log Kow used by BCF estimates: 1.48 (user entered)

Equation Used to Make BCF estimate:
Log BCF = 0.6598 log Kow - 0.333 + Correction

Correction(s):   Value
No Applicable Correction Factors

Estimated Log BCF = 0.644 (BCF = 4.401 L/kg wet-wt)

==
Whole Body Primary Biotransformation Rate Estimate for Fish:
==

TYPE	NUM	LOG BIOTRANSFORMATION FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	Aliphatic chloride [-CL]	0.3608	0.7215
Frag	2	-CH2- [linear]	0.0242	0.0484
L Kow	*	Log Kow = 1.48 (user-entered)	0.3073	0.4549
MolWt	*	Molecular Weight Parameter		-0.2538
Const	*	Equation Constant		-1.5371
RESULT		LOG Bio Half-Life (days)		-0.5661
RESULT		Bio Half-Life (days)		0.2716
NOTE		Bio Half-Life Normalized to 10 g fish at 15 deg C		

Biotransformation Rate Constant:
kM (Rate Constant): 2.552 /day (10 gram fish)
kM (Rate Constant): 1.435 /day (100 gram fish)
kM (Rate Constant): 0.807 /day (1 kg fish)
kM (Rate Constant): 0.4538 /day (10 kg fish)

Arnot-Gobas BCF & BAF Methods (including biotransformation rate estimates):
Estimated Log BCF (upper trophic) = 0.577 (BCF = 3.777 L/kg wet-wt)
Estimated Log BAF (upper trophic) = 0.577 (BAF = 3.777 L/kg wet-wt)
Estimated Log BCF (mid trophic)   = 0.461 (BCF = 2.89 L/kg wet-wt)

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Estimated Log BAF (mid trophic)   =  0.461  (BAF = 2.89 L/kg wet-wt)
Estimated Log BCF (lower trophic) =  0.426  (BCF = 2.669 L/kg wet-wt)
Estimated Log BAF (lower trophic) =  0.426  (BAF = 2.67 L/kg wet-wt)

Arnot-Gobas BCF & BAF Methods (assuming a biotransformation rate of zero):
Estimated Log BCF (upper trophic) =  0.615  (BCF = 4.123 L/kg wet-wt)
Estimated Log BAF (upper trophic) =  0.621  (BAF = 4.176 L/kg wet-wt)
```

```
Volatilization From Water
=========================

Chemical Name: Ethane, 1,2-dichloro-

Molecular Weight    :  98.96 g/mole
Water Solubility    :  8600 ppm
Vapor Pressure      :  78.9 mm Hg
Henry's Law Constant:  0.00154 atm-m3/mole  (entered by user)

RIVER             LAKE
---------         ---------
Water Depth     (meters):   1                1
Wind Velocity    (m/sec):   5                0.5
Current Velocity (m/sec):   1                0.05

HALF-LIFE (hours) :   1.393            98.61
HALF-LIFE (days ) :   0.05805          4.109


STP Fugacity Model:  Predicted Fate in a Wastewater Treatment Facility
======================================================================
(using 10000 hr Bio P,A,S)
PROPERTIES OF: Ethane, 1,2-dichloro-
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Molecular weight (g/mol)                                98.96
Aqueous solubility (mg/l)                               8600
Vapour pressure (Pa)                                    10519.1
(atm)                                  0.103816
(mm Hg)                                78.9
Henry 's law constant (Atm-m3/mol)                      0.00154
Air-water partition coefficient                         0.0629814
Octanol-water partition coefficient (Kow)               30.1995
Log Kow                                                 1.48
Biomass to water partition coefficient                  6.8399
Temperature [deg C]                                     25
Biodeg rate constants (h^-1),half life in biomass (h) and in 2000 mg/L MLSS (h):
-Primary tank        0.01       134.95       10000.00
-Aeration tank       0.01       134.95       10000.00
-Settling tank       0.01       134.95       10000.00

STP Overall Chemical Mass Balance:
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g/h               mol/h          percent

Influent                    1.00E+001         1.0E-001        100.00

Primary sludge              3.18E-002         3.2E-004         0.32
```

Waste sludge	9.56E-002	9.7E-004	0.96
Primary volatilization	1.14E-001	1.1E-003	1.14
Settling volatilization	1.93E-001	1.9E-003	1.93
Aeration off gas	3.53E+000	3.6E-002	35.25
Primary biodegradation	1.76E-003	1.8E-005	0.02
Settling biodegradation	3.28E-004	3.3E-006	0.00
Aeration biodegradation	4.39E-003	4.4E-005	0.04
Final water effluent	6.03E+000	6.1E-002	60.35
Total removal	3.97E+000	4.0E-002	39.65
Total biodegradation	6.47E-003	6.5E-005	0.06

Level III Fugacity Model (Full-Output): User Koc
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Chem Name : Ethane, 1,2-dichloro-
Molecular Wt: 98.96
Henry's LC : 0.00154 atm-m3/mole (user-entered)
Vapor Press : 78.9 mm Hg (user-entered)
Log Kow : 1.48 (user-entered)
Soil Koc : 59 (user-entered)

Mass Amount (percent)		Half-Life (hr)	Emissions (kg/hr)
Air	61.9	51	9.09e+004
Water	5.93	8.76e+003	700
Soil	32.1	8.76e+003	8400
Sediment	0.0282	8.76e+003	0

Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)	
Air	1.04e-008	5.73e+004	4.21e+004	57.3	42.1
Water	3.14e-008	31.9	403	0.0319	0.403
Soil	1.09e-006	173	0	0.173	0
Sediment	3.08e-008	0.152	0.0383	0.000152	3.83e-005

Persistence Time: 68 hr
Reaction Time: 118 hr
Advection Time: 160 hr
Percent Reacted: 57.5
Percent Advected: 42.5

Water Compartment Percents:

Mass Amount (percent)		Half-Life (hr)	Emissions (kg/hr)
Air	61.9	51	9.09e+004
Water	5.93	8.76e+003	700
water	(5.93)		
biota	(8.95e-006)		
suspended sediment	(0.000525)		
Soil	32.1	8.76e+003	8400
Sediment	0.0282	8.76e+003	0

Half-Lives (hr), (based upon user-entry):
Air: 51
Water: 8760
Soil: 8760

Sediment: 8760

Advection Times (hr):
Air: 100
Water: 1000
Sediment: 5e+004

Level III Fugacity Model (Full-Output): EQC Default
==========
Chem Name   : Ethane, 1,2-dichloro-
Molecular Wt: 98.96
Henry's LC : 0.00154 atm-m3/mole (user-entered)
Vapor Press : 78.9 mm Hg (user-entered)
Log Kow   : 1.48 (user-entered)
Soil Koc   : 12.4 (EQC Model Default)

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)	
Air	78.1	51	9.09e+004	
Water	7.49	8.76e+003	700	
Soil	14.4	8.76e+003	8400	
Sediment	0.0188	8.76e+003	0	

	Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)
Air	1.04e-008	5.73e+004	4.22e+004	57.3	42.2
Water	3.15e-008	32	405	0.032	0.405
Soil	1.11e-006	61.8	0	0.0618	0
Sediment	3.04e-008	0.0803	0.0203	8.03e-005	2.03e-005

Persistence Time: 54 hr
Reaction Time: 94.1 hr
Advection Time: 127 hr
Percent Reacted: 57.4
Percent Advected: 42.6

Water Compartment Percents:

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)	
Air	78.1	51	9.09e+004	
Water	7.49	8.76e+003	700	
water	(7.49)			
biota	(1.13e-005)			
suspended sediment	(0.000139)			
Soil	14.4	8.76e+003	8400	
Sediment	0.0188	8.76e+003	0	

Half-Lives (hr), (based upon user-entry):
Air: 51
Water: 8760
Soil: 8760
Sediment: 8760

Advection Times (hr):
Air: 100
Water: 1000
Sediment: 5e+004
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