Table A-3. Chemical Properties of 1,2,3-TCP, PCE, TCE, and 1,4-Dioxane

Property	1,2,3-Trichloropropane	Tetrachloroethene	Trichloroethene	1,4-Dioxane	Reference
Molecular Weight	147.43	165.83	131.39	88.11	NIST database
Melting Point (°C)	-14	-22	-73	12	www.inchem.org
Boiling Point (°C)	156	121	87	101	www.inchem.org
Specific Gravity at approximately 20 ^{o}C (Water = 1)	1.42	1.63	1.46	1.03	Verschueren, 1983
Vapor Pressure (kilopascals at 20 °C)	0.29	1.9	7.8	4.1	www.inchem.org
Saturated Concentration (mg/L) in water at 20°C	1,750[a]	126[b]	415[b]	miscible[b]	[a]At 25 ^{o}C per WHO, 2003; [b]Verschueren, 1983
Relative Vapor Density at 20°C (Air=1)	5.1	5.8	4.5	3.0	www.inchem.org
Henry's Law Constant (atm*m^3/mol) indicating volatility at 25°C	0.000344[c]	0.0171[d]	0.0102[d]	0.00000488[c]	[c]Howard, 1993; [d]AWWA, 1999
Octanol/Water Partition Coefficient (log K_{ow})	2.3	2.9	2.4	-0.42	www.inchem.org
Organic Carbon Partition Coefficient (K_{oc})	68	277	126	--	NYSDEC, 2005
Biodegradation Half-Life in Soil (months)[e]	6 to 12	6 to 12	6 to 12	1 to 6	Howard, 1991
Biodegradation Half-Life in Groundwater (months)[e]	12 to 24	12 to 24	11 to 53	4 to 24	Howard, 1991

Notes:
°C - degrees Celsius
mg/L - milligrams per liter
mol/kg*atm - moles per kilogram times atmospheres at 25 degrees Celsius
atm*m^3/mol - atmospheres times cubic meters per mole at 25 degrees Celsius
[e]Scientific judgment based upon estimated aqueous aerobic biodegradation half-life.

References:

NIST Database - http://webbook.nist.gov/chemistry/name-ser.html
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www.inchem.org: For Tetrachloroethene (PCE) - http://www.inchem.org/documents/icsc/icsc/eics0076.htm
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