

Carcinogen

1,4 Dioxane

CAS#
123-91-1

Water Supply Std.= 0.35 ug/L

Human Health Std.= 80 ug/L

WS

$$WQS = (RL \times WT) / (q1^* \times [WI + (FC \times BAF)])$$

VALUES FOR THE EQUATION

where:	RL = risk level	1.00E-06	
	WT = Weight 70 kg	70 kg	
	q1* = carcinogenic potency factor	1.00E-01 mg/kg/day	Source: IRIS 8/10
	WI = average human water intake 2L/day	2 L/day	
	FC = Fish consumption rate	0.0175 kg/person-day	
	BAF = bioaccumulation rate	5.00E-01 L/kg	RAIS 8/10

$$WQS = 0.0003485 \text{ mg/l} = 0.3485 \text{ ug/l}$$

Integrated Risk Information System (IRIS) <http://www.epa.gov/iris/>

Risk Assessment Information System (RAIS) <http://risk.lsd.ornl.gov/index.shtml>

Not WS

$$WQS = (RL \times WT) / (q1^* \times (FC \times BAF))$$

$$WQS = 0.0800000 \text{ mg/l}$$

$$80 \text{ ug/l}$$

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1,4-Dioxane
CAS# 123-91-1

Non-carcinogen

Water Supply Std.= 1 mg/L
Human Health Std.= 240 mg/L

WS **WQS = (RfD x WT) / [WI + (FC x BAF)]**

where:

	VALUES FOR THE EQUATION	Source
RfD = reference dose	3.00E-02 mg/kg/day	IRIS 8/10
WT = Weight 70 kg	70 kg	
WI = average human water intake 2L/day	2 L/day	
FC = Fish consumption rate	0.0175 kg/person-day	
BAF = bioaccumulation rate	5.00E-01 L/kg	RAIS 8/10
WQS = 1.05 mg/l = 1045.43 µg/l		

Risk Assessment Information System (RAIS) <http://risk.lsd.ornl.gov/index.shtml>
Integrated Risk Information System (IRIS) <http://www.epa.gov/iris/>

Human Health **WQS = (RfDx WT) / (FC x BAF)**

WQS = 240.00 mg/l
 240000.00 ug/l

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Freshwater Aquatic Life Std. = 110000 ug/L

1 Datapoint Used:	Values	Source
log P _{oct} = -.27, so safety factor (SF)=	0.05	RAIS 2/24/10
Final Acute Value (FAV) =	2274000 µg/l	ECOTOX 2/24/10
Chronic Concentration (FAV * SF)=	113700 µg/l	
Acute Concentration (1/2 FAV)=	1137000 µg/l	

Species: Gammarus pseudolimnaeus (Scud)
96H LC50 under Flowthrough exposure conditions
ECOTOX Ref. # 14339

Risk Assessment Information System (RAIS) <http://risk.lsd.ornl.gov/index.shtml>

ECOTOX <http://www.epa.gov/ecotox/>

log oct:water value <=4.29, use 0.05 of the FAV

log oct:water value > 4.29, use 0.01 of the FAV

Saltwater Aquatic Life Std. = 330000 ug/L LD

1 Datapoint Used:	Values	Source
log P _{oct} =-.27, so safety factor (SF)=	0.05	RAIS 2/24/10
Final Acute Value (FAV) =	6700000 µg/l	ECOTOX 2/24/10
Chronic Concentration (FAV * SF)=	335000 µg/l	
Acute Concentration (1/2 FAV)=	3350000 µg/l	

Species: Menidia beryllina (Inland Silverside)
96H LC50 under Static exposure conditions
ECOTOX Ref. # 863

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