

Propylene glycol (CAS: 57-55-6)				
	Yes / No / Insufficient data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes		OECD SIDS (2001)	A number of studies reported that propylene glycol is readily biodegradable. Two studies in sludge were noted in the SIDS report. One reported 79% after 20d and another 84-99% after 24hr. In soil a study reported 100% degradation after 12days.
Passes inherent biodegradation test <i>If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required</i>				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days <i>If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent</i>				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification? <i>If answer to either question is YES, substance is bioaccumulative</i>	No	1.4	OECD SIDS (2001)	A BCF of 1.4 was calculated from the log Kow
If no BCF data, is log Kow ≥ 4.5? <i>If answer is YES, substance is bioaccumulative</i>	No	-1.41 and -0.3	OECD SIDS (2001)	
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l <i>If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained</i>				Not considered due to the above information
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	13020	OECD SIDS (2001)	The value noted is a 7d NOEC reproduction for the invertebrate Ceriodaphnia dubia. This indicates low chronic toxicity to this species. Chronic data for algal species also indicated that it would not meet the criteria with 14d NOECs of <5300mg/l reported. No chronic data was available for fish but the acute data for fish indicate low toxicity with acute effects reported in the range of 46500 - 51600mg/l. This acute data and the chronic data available indicate propylene glycol does not meet the criteria for chronic toxicity to aquatic life.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database/SIDS (2001)	An EU harmonised C&L classification is not available for propylene glycol. Industry data submitted to the ECHA database indicates that it does not meet these criteria. This is supported by data presented in the SIDS assessment where the data provided did not indicate effects from long term exposure.
Is substance carcinogenic (Carc. 1A, 1B), mutagenic (Muta. 1A, 1B) or toxic for reproduction (Repr. 1A, 1B, 2) <i>If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic</i>	No		ECHA C&L database/SIDS (2001)	An EU harmonised C&L classification is not available for propylene glycol. Industry data submitted to the ECHA database indicates that it does not meet these criteria. This is supported by data presented in the SIDS assessment where the data provided did not indicate any evidence of carcinogenic or genotoxic effects and no evidence of reproductive or developmental toxicity.
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			Available data indicates it does not meet the criteria for P, B or T
Does substance pose an equivalent level of concern?				
Verv persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days <i>If answer to any question is YES, substance is very persistent</i>	No			A number of studies reported that propylene glycol is readily biodegradable. Two studies in sludge were noted in the SIDS report. One reported 79% after 20d and another 84-99% after 24hr. In soil a study reported 100% degradation after 12days.
Is bioconcentration factor ≥ 5000 <i>If answer is yes, substance is very bioaccumulative</i>	No	1.4	OECD SIDS (2001)	A BCF of 1.4 was calculated from the log Kow
Is substance very persistent and very bioaccumulative?	No			Does not meet the criteria for either vP or vB
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ? <i>If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?</i>	Not assessed			
<i>If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous</i>				
Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance a known endocrine disruptor (category 1)?				
Is substance mutagenic (Muta. 1A, 1B, 2) or have no determinable threshold for adverse effects on human health <i>If answer to any question is YES, substance is very toxic and hazardous</i>	No			An EU harmonised C&L classification is not available for propylene glycol. Industry data submitted to the ECHA database indicates that it does not meet these criteria. This is supported by data presented in the SIDS assessment where the data provided did not indicate any evidence of genotoxic effects.
Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			

equivalent risk phrases: T,R23/24/25, T+,R26/27/28 (does not include Xn: R20, Xn:R21, Xn:R22)

* equivalent risk phrases T,R39/23/24/25, T+,R26/27/28, T,R49/23/24/25 (does not include R33, R67, Xi, R37, Xn:R48/20/21/22, Xn:R68/20/21/22)

^ equivalent risk phrases Carc. Cat. 1, Carc. Cat. 2, T,R45, T,R49, mutagenic Muta. Cat. 1, Muta. Cat. 2, Muta. Cat. 3, T,R46, T,R68, toxic for reproduction Repr. Cat. 1, Repr. Cat. 2, R60, R61 (does not include Carc. Cat. 3, Xn:R40, Repr. Cat. 3, Xn:R62, Xn:R63)

Does substance have breakdown products of concern? **No**

REFERENCES

OECD SIDS (2001)

<http://www.inchem.org/documents/sids/sids/57-55-6.pdf>

ECHA C&L database

http://echa.europa.eu/information-on-chemicals/cl-inventory-database?p_id=discInventory_WAR_discInventoryportlet&p_lifecycle=0&p_state=normal&p_mode=view&p_col_id=column-1&p_col_css=1&p_col_count=2